



Tourism-driven rural spatial restructuring in the metropolitan fringe: An empirical observation

Chunliu Gao^{a,b}, Li Cheng^{a,b,*}

^a Tourism School, Sichuan University, No.24 South Section 1, Yihuan Road, Chengdu 610064, China

^b International Laboratory for Interdisciplinary Tourism & Heritage Research, Sichuan University, Chengdu 610041, China



ARTICLE INFO

Keywords:

Rural spatial restructuring
Land consolidation
China
Rural tourism
Qinggangshu Village
Metropolitan fringe

ABSTRACT

Rural spatial restructuring is regarded as an important method of achieving rural revitalization in China in recent years. With the spillover of leisure consumption demand in metropolitan areas, the rural spatial structure has undergone significant changes. To analyze the causal logic of rural spatial restructuring, this study constructs a tourism-driven rural spatial restructuring framework. Furthermore, GIS and participatory fieldwork are used to reveal the changing process of rural spatial restructuring. A case study of Qinggangshu Village shows that tourism-driven rural spatial restructuring is the result of internal and external forces, while land consolidation is highlighted as a direct way to trigger rural spatial restructuring, and rural tourism can accelerate land consolidation, and realize rural revitalization. However, for those villages without any resource endowment, simple land consolidation cannot improve the rural economy in a short period. Moreover, once rural spatial restructuring is completed, the rural economy and social culture will also be restructured. The framework demonstration results will provide a “road map” to rural spatial restructuring in metropolitan fringe areas and serve as a practical information resource for policy-makers. The driving factors of rural spatial restructuring are diverse at different stages. Therefore, the government should adopt a gradual management model, and systematically mobilize all forces to participate in rural construction to realize the sustainable development of rural areas.

1. Introduction

Since the 1990s, the collision of internal developmental elements and the pulling force of external demand in the process of urbanization have driven the great changes in human–land relationship and regional functions in rural China. Under the intervention of multi-subjects, rural areas are undergoing varying degrees of restructuring (Long, 2013a; Liu et al., 2010, 2016; Yang et al., 2015). As the node of the intersection of material, energy, and information flows between urban-rural regional systems, in recent years, new types of rural economy, such as leisure tourism and cultural and creative industries, have emerged in the metropolitan fringe (Yang et al., 2015). Under the stimulation of the huge tourism market, the rural space inevitably requires a reconstruction (Yao and Xie, 2016). The process of rural restructuring represented by tourism has gradually become an effective support for promoting industrial integration and revitalizing the rural economy in the surrounding villages of the metropolis (Tu et al., 2018). The spatial form of rural transformation is primarily reflected in land use change and spatial form change, and also accompanied by the changes of rural

living environment and social economy (Long and Liu, 2016). In Western developed countries, these changes and anti-urbanization processes are carried out simultaneously. The flow of population from the city to the countryside triggers the transformation of the countryside from the primary industry to the tertiary industry, which significantly impacts the settlement landscape pattern (Marsden et al., 1990; Terluin, 2003), thus leading to the reconstruction of the rural population and changes in the architecture and settlement pattern. As Woods (2005) and Li (2019) indicated, during the process of rapid urbanization, rural reconstruction is inevitable. Due to the decline of the proportion of agricultural economy and the rise of the tertiary industry, the socio-economic structure of rural areas will be reshaped, thus eventually leading to rural transformation. In developing countries, rural transformation originates from changes in the farmland and homestead. Under the influence of changes in the social structure and the economic model, the land use is changing constantly, which corresponds to the transformation stage of social and economic development (Tu et al., 2018). Studies have shown that rural restructuring is a systematic engineering (Beyers and Nelson, 2000; Hoggart and Paniagua, 2001;

* Corresponding author at: Tourism School, Sichuan University, No.24 South Section 1, Yihuan Road, Chengdu 610064, China.

E-mail addresses: gaochl90@163.com (C. Gao), chengli@scu.edu.cn (L. Cheng).

Woods, 2005) that involves a wide range of contents and rich connotations, including rural social, economic, and spatial restructuring (Hu et al., 2011; Kiss, 2000; Nelson, 2001; Tu et al., 2018). Among them, rural spatial restructuring is defined as the transformation of the urban-rural relationship and the process of rural element reorganization in China (Yao and Xie, 2016). During this process, the rural production, living, and ecological spaces are constantly optimized, adjusted, and even fundamentally changed (Liu et al., 2010). The essence of rural restructuring is a process wherein the actors optimize the rural production, life, and ecological space through policies, economy, engineering, and other means, thereby focusing on the intervention of land resource allocation (Long, 2013b). Based on the continuous improvement of the urbanization level, the impact of rural tourism primarily based on urban consumption economy is increasingly prominent on rural spatial restructuring.

Extensive research concerning rural tourism, rural settlements space and rural transformation already existed (Dahms, 1991; Latifi et al., 2010; Liu and Li, 2017; Lobley and Potter, 2004; Tu et al., 2018). Since the end of the 19th century, driven by the continuous transformation of the tourism concept from an ecological perspective, as well as the demonstration of foreign excellent rural tourism cases and the promotion of poverty eradication policies (Kieselbach and Long, 1990; Sharpley, 2002), the tourism market began to pay increased attention toward the development of rural tourism. Rural tourism has gradually become an important driving force to promote the transformation and reconstruction of rural development (Fleischer and Felsenstein, 2000; Maitland and Newman, 2004). Carrion-Flores and Irwin (2004) pointed out that the change in the pattern of rural settlements is primarily affected by the adjustment of industrial structure, urbanization, and lifestyle changes. According to Hoskins (1955), the spatial distribution characteristics of rural areas are primarily affected by the degree of land richness and the type of settlements. Entering the 21st century, based on the improvement of the global urbanization level, the rural function gradually changes from the production function to the tourism function. As the most basic spatial unit of rural tourism development, the "touristification transformation" of rural settlements will directly affect the spatial form and pattern of rural areas (Xi et al., 2015). Xi et al. (2013) noted that based on the continuous transformation of rural settlements toward touristification, the functions and forms of traditional villages continue to disintegrate. The original single rural residential land and production land are gradually transforming to various land types to fulfill the needs of tourism reception. Wu et al. (2004) measured and analyzed the distance between 100 rural tourist destinations and approximately 69 tourist source cities of differing scales in China, and found that the closer they are to the city, the more rural tourist destinations are distributed, and they are primarily concentrated in areas within 100 km from the city, which further proves that the villages around the metropolis are increasingly vulnerable to being impacted by tourism development. Although Gao et al. (2014) worried that during the process of rural tourism development, especially under the strong discourse power of urban consumers, the countryside was gradually swallowed by the city, and the real space and local culture of traditional villages would gradually disappear. However, rural areas interact with cities with increasing frequency in the sharing of production, life, and ecological resources; the vigorous development of rural tourism in the metropolitan fringe continues to provide important opportunities for rural transformation throughout the world (Kieselbach and Long, 1990; Vafadari, 2013). Moreover, as an important carrier of rural tourism development, the spatial pattern of rural settlements will be affected by the transformation of traditional villages into tourist destinations (Nikolaos, 2019; Xi et al., 2015). In practice, the decline of rural areas leads to the hollowness of villages, in terms of people and land to settlement space, which also increases the urgency of exploring the rural transformation mode in the context of hollowness (Long et al., 2009). The integration of space, organization, and industry in rural areas should be the key to the reconstruction of rural settlement

space. It can be perceived that the spatial restructuring of rural settlements is not only a necessary path of agricultural production and the modernization of villagers' lives, but also an important countermeasure for the rational adjustment and utilization of land resources. Therefore, it should not only be understood as a method of intervening in rural development in the future, but also as a tool of coordinating and coupling various elements, such as rural population, land, and industry.

In China, the rural population accounts for 41.48 % of that of the entire country, with 576.61 million people living in rural areas in 2017 (National Bureau of Statistics of China (NBSC, 2017). The long-term urban-rural binary system has considerably restricted the development of rural areas (Long et al., 2010). For instance, in some rural areas, extensive waste of living space, scattered production space, deterioration of ecological space, and other phenomena are grievous issues, thereby resulting in the waste of rural land resources and the lack of space support platform for the cultivation of new business forms in rural areas (Gao et al., 2014; Wang, 2013). Rural development has been a concern of many successive governments (Li and Zhang, 2012). For a long time, rural tourism has been regarded as an important industry to reduce poverty because of its irreplaceable advantages in improving rural productivity, optimizing the use of resources, and building a platform (Gao and Wu, 2017). In 2018, the Chinese government implemented the rural revitalization policies (Liu and Yang, 2015), and further strengthened the value of rural tourism (Guo and Sun, 2016; Kawate, 2005; Liu, 2018). Through land use as a concrete manifestation of space, the development of tourism may not only improve the utilization rate of rural land and allow some inefficient, unreasonable, and unused land to receive comprehensive treatment, but also activate the key elements of rural development (Tu et al., 2018), promote the transformation of rural resources to capital, and build a new platform for rural revitalization development (He et al., 2013), especially for rural areas in the metropolitan fringe.

Rural recession and transformation, accompanied by urbanization, is a global challenge (Liu and Li, 2017). Due to the limited land resources, during the process of urban expansion, the involvement of some rural areas around the metropolis is inevitable. On the other hand, for the current public, collective ownership of land in China requires that land transactions and land use must be based on public ownership of land. Private land transfer is not supported by the Chinese government, and traditional agriculture does not provide enough benefits for farmers, which result in serious abandonment and extensive management of rural land (Ye, 2010; Gao and Wu, 2017). However, under the stimulation of tourism, rural land in the metropolitan fringe is widely used in tourism landscape production to fulfill the leisure requirements of urban people, especially through the government's encouragement and support for rural tourism, which has greatly improved the utilization rate of land and highlighted the value of rural space in providing a resource base and place support. Therefore, how does tourism drive rural spatial restructuring? How can such a typical village in the metropolitan fringe realize rural revitalization through spatial restructuring? This study constructs a tourism-driven rural spatial restructuring framework from an interdisciplinary perspective, which offers an improved understanding of the process and driving factors of rural spatial restructuring. In addition, a case study is conducted regarding Qinggangshu Village around Chengdu City to clarify the framework.

2. Study area and data

2.1. Study area

Qinggangshu Village is located in the east of Sandaoyan Town, Chengdu, Sichuan Province (Fig. 1). It covers an area of 2.4 square kilometers including 125.87 ha of arable land. There are 11 communities, 932 families, and 2300 people in the village, which is a typical village on the fringe of metropolitan areas in western China and just

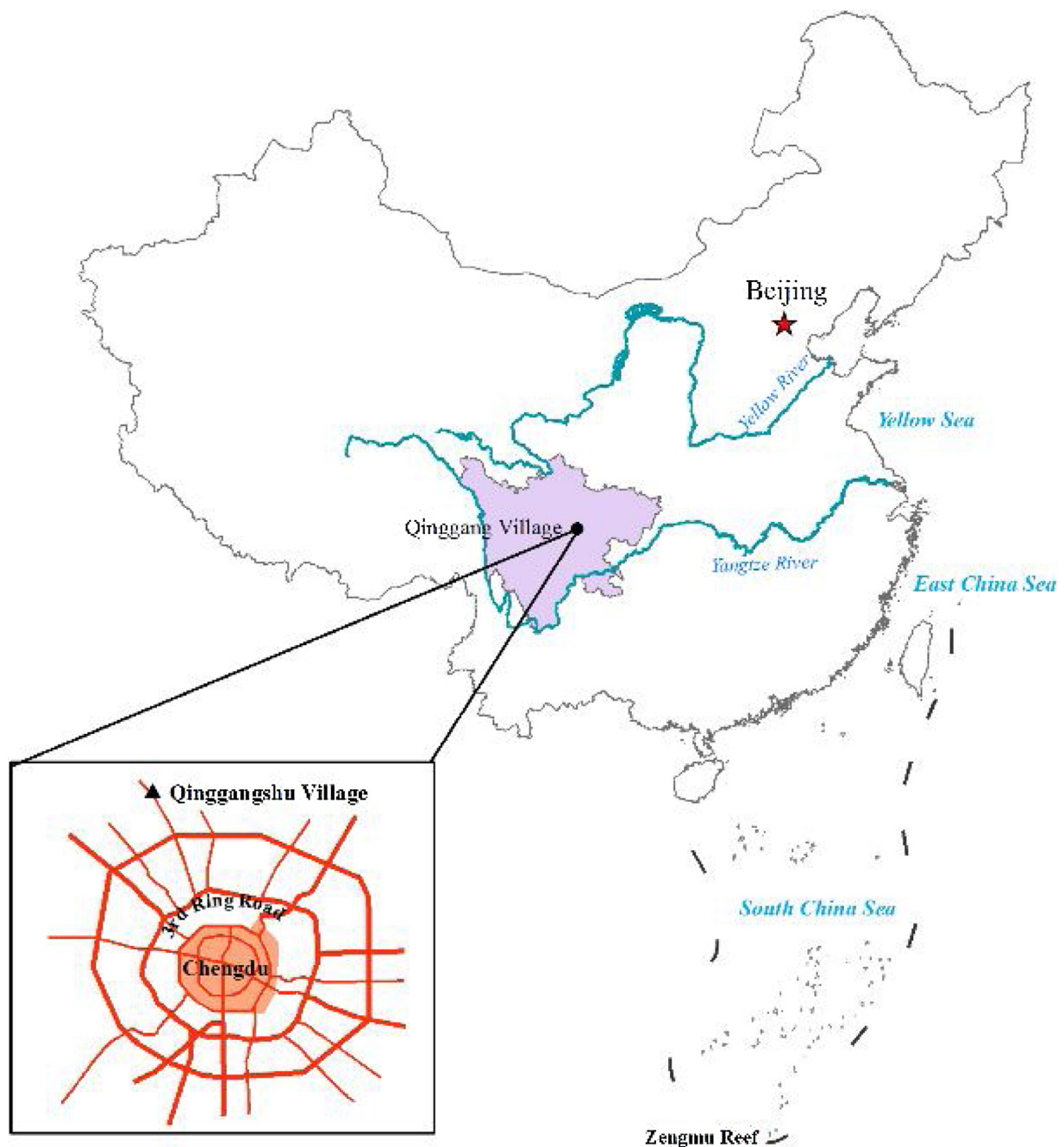


Fig. 1. Location of Qinggangshu Village in China.

16 km from the urban area of Chengdu city. This village has a unique form of living space known as Linpan. Linpan refers to the rural living space formed by the organic integration of farmyards and surrounding tall trees, bamboo forests, rivers, and peripheral arable land in Chengdu plain and hilly areas in western Sichuan.

Before 2012, the development of Qinggangshu Village primarily relied on traditional farming, and the living conditions were abominable. Villagers mostly worked in manufactories nearby or further away, and rarely returned to the village. In recent years, with the continuous rise of urban residents' consumption capacity and boost of urban leisure economic growth, rural areas in the metropolitan fringe have become increasingly popular for holiday tourism consumption because of their convenient transportation and different from the fast-paced lifestyle and spatial landscape of the city.

The development of tourism not only promotes the economy, but

also brings many honors to Qinggangshu Village. In 2015, Qinggangshu Village was awarded the title as one of the "Ten Most Beautiful Rural Areas in China," and entitled "Leisure Beautiful Rural Area in China" and "4A-level National Tourism Scenic Area" in 2016. By 2018, the collective income of the village was approximately \$64475.3013, and the per capita disposable income of farmers reached \$4176.09, almost twice the national level of \$2064.4897 in the same period (National Bureau of Statistics of China (NBSC, 2019)). Because rural tourism provides considerable economic benefits, it attracts an increasing number of villagers to return home to start their own business. This village is now filled with vitality. As such, this case is a representative example by which to understand the tourism-driven restructuring of rural space in China.

2.2. Data sources

The data sources of this study were a field investigation and remote sensing images. The investigation was conducted in 2018 for six months, during which the author and team members visited Qinggangshu Village for the field observation and investigation several times, got along with the villagers, and established a good relationship. The formal research was completed in August 2018.

To study the land use change and landscape of Qinggangshu Village, after multi-period image comparison, the most representative images (2002 and 2017) before and after rural reconstruction were selected as the data source, with the rural reconstruction in 2012 as the time node. Moreover, we downloaded remote sensing image data from Google Earth. The source of the high-resolution images was DigitalGlobe, an American commercial vendor of space imagery and geospatial content, and operator of civilian remote sensing spacecraft.

3. Methodology

3.1. Constructing a tourism-driven rural spatial restructuring framework

As mentioned above, rural spatial is a complex system, and therefore, both qualitative and quantitative research methods are needed. In this study, we first conducted a survey of regional characteristics and current tourism development. To better understand the nature of rural spatial restructuring and explore its internal causality, this study introduced the Driving Forces (D) - Pressure (P) - State (S) - Impact (I) - Responses (R) (DPSIR) model to explain the mechanism of tourism-driven rural restructuring. The DPSIR framework is an extended model for an environmental system assessment developed by the European Environment Agency (EEA) based on the Pressure (P) - State (S) - Responses (R) (PSR) and Driving Forces (D) - State (S) - Responses (R) (DSR) framework (Jago-On et al., 2009). The DPSIR framework considers the interaction between the geographic environment and human society and proposes a causal analysis approach. It delineates the evaluation indicators of a natural system into five modules: Driving Forces (D), Pressure (P), State (S), Impact (I), and Responses (R) (Svarstad et al., 2008; Tscherning et al., 2012). Each module is divided into several indicators; therefore, it is more suitable for analyzing and explaining related issues in the human-land relationship regional system. Taking the tourism development of Qinggangshu Village as a case study, we analyzed the Driving Forces (D), Pressure (P), and State (S) characteristics based on qualitative interviews to derive their Impacts (I). The Responses (R) included four aspects, namely restructuring of the town-village spatial system, production space, living space, and ecological space, which are direct reflections of the Impacts (I). These four aspects of rural spatial restructuring were put forward by Long and Liu (2016) and Long and Tu (2017) based on numerous comparative studies of Chinese rural areas (Long and Liu, 2016; Long and Tu, 2017). Furthermore, we conducted qualitative interviews to describe the restructuring of the town-village spatial system and production space, analyzed land use change to describe the restructuring of living space, and conducted a landscape pattern index analysis to describe the restructuring of ecological space. The specific process is shown Fig. 2.

3.2. Specific methodology

3.2.1. Qualitative interview

To obtain first-hand information, the researchers conducted semi-structured and unstructured interviews several times with stakeholders, such as tourists, villagers, government officials, and enterprises (Gibson, 2010; Mctate and Leffler, 2017). During the early stage, unstructured interviews were used to understand the development of the village and residents' living conditions. During the later stage, semi-structured interviews were used to clarify the actual situation of villagers' participation in tourism, rural tourism development process, land

consolidation, and farmland and homestead status. On the basis of the interview results, the corresponding quantitative analysis was carried out. Table 1 shows the list of interviewees, including all the stakeholders in the village and covering all the residents' settlements in the community.

3.2.2. Analysis of land use change

To analyze land use change in a certain region in different years, the land use transfer matrix is commonly employed. The land use transfer matrix comes from the quantitative description of the system state and the state transition in a system's analysis. As shown in Table 2, the rows represent the land use types at time T_1 , and the columns the land use types at time T_2 . P_{ij} denotes the area in which land use is converted from type i to type j during T_1-T_2 . P_{ii} denotes the area of land use type i that remains unchanged during T_1-T_2 . P_i+ denotes the total area of land use type i at T_1 time, and P_{+j} denotes the total area of land use type J at T_2 . $P_{i+}-P_{ii}$ denotes the area decreasing of land use type i is decreasing during T_1-T_2 , and $P_{+j}-P_{jj}$ the area wherein land use type J is increasing during T_1-T_2 .

3.2.3. Landscape pattern index analysis

The landscape pattern index reflects the structural characteristics of land use types. Shannon's Diversity Index (SHDI) is a measurement index widely used in ecology based on information theory. SHDI is equal to the negative sum of the area ratio of each patch type multiplied by the natural logarithm of its value at the landscape level:

$$SHDI = - \sum_{l=1}^s P_l \ln P_l \quad (1)$$

where s is the amount of patches, and P_i the area ratio of each patch type. $SHDI = 0$ indicates that the whole landscape is composed of only one patch, and the increase of SHDI indicates that the patch types increase or distribute equally in the landscape. In a landscape system, the richer the land use is, the higher is the degree of fragmentation, the more uncertain the information content, and the higher is the calculated SDHI value.

Shannon's Evenness Index (SHEI) equals the SHDI divided by the maximum possible diversity under a given landscape abundance (all patch types are equally distributed). $SHEI = 0$ indicates that the landscape is composed of only one type of patch without diversity, and $SHEI = 1$ indicates that the patches are evenly distributed and have the greatest diversity.

$$SHEI = \frac{SHDI}{SHDI_{max}} \quad (2)$$

where SHDI is Shannon's Diversity Index, and $SHDI_{max}$ is the maximum possible diversity under a given landscape abundance (all patch types are equally distributed).

4. Results and analysis

4.1. D-P-S analysis of Qinggangshu Village

The dilemma faced by rural development and the pressure to get rid of poverty are the internal driving force of rural transformation. Before 2000, Qinggangshu Village was a wharf with catering shops, small department stores, hotels, and a very busy market trade. However, after two fires, the market trade gradually declined, thus transforming Qinggangshu into a poverty-stricken village. Because of the poor living conditions, most residents worked in nearby factories or places further away, and rarely returned to the village. The loss of the labor force was severe, and only the elderly and children remained in the village. According to villager C04: "To be honest, the village was too poor at that time and the policy was not good. To support my family, I have no choice but to leave our children at home and work in other places."

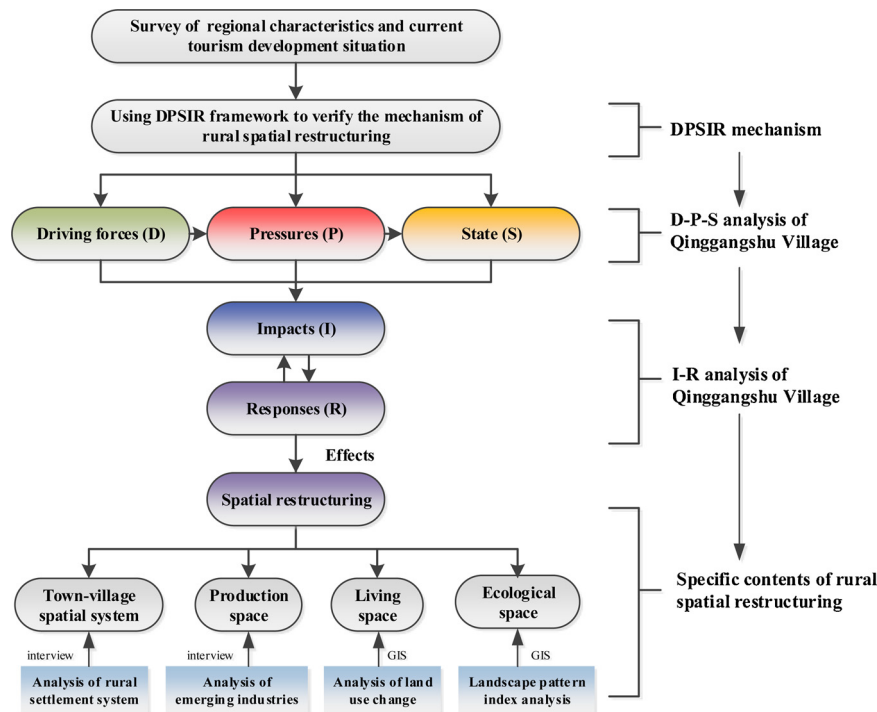


Fig. 2. The tourism-driven rural spatial restructuring framework in the metropolitan fringe.

Table 1
Type and number of interviewees.

Interviewees	Number	Code
Indigenous residents who run Nongjiale	10	C01-C07, C11-C12, C17
Villagers who are not Participating in tourism	2	C09, C15
Members of village committee	2	Z1, Z2
Individual businessmen	4	C10, C13, C08, C16
Tourism Cooperative Enterprises	4	G1-G4
Tourists	6	C14, C18-C22

Table 2
Land use transfer matrix.

	T ₂					Pi +	Decreasing
	A1	A2	...	An			
T ₁	A1	P ₁₁	P ₁₂	...	P _{1n}	P ₁₊	P ₁₊ -P ₁₁
	A2	P ₂₁	P ₂₂	...	P _{2n}	P ₂₊	P ₂₊ -P ₂₂

	An	P _{n1}	P _{n2}	...	P _{nn}	P _{n+}	P _{n+} -P _{nn}
P _{+j}	P + 1	P + 2	...	P + n			
Increasing	P + 1-P ₁₁	P + 2-P ₂₂	...	P + 2-P ₂₂			

The release of tourism market demand in the metropolitan area is the fundamental driving force for the spatial restructuring of Qinggangshu Village. Around 2008, tourism market demand in the metropolitan fringe increased (Zhang et al., 2001) as urban residents grew tired of their high-pressure urban lives, and wanted to turn to the rural experience. With its geographic advantages and landscape environment, Qinggangshu Village, in the fringes of Chengdu City, began to attract the attention of tourists, whose arrival brought hope for the development of the village. Some farmers with good consciousness and certain economic strength were the first to participate in the tourism management by engaging in “Nongjiale” and tourism commodity sales. For example, the first teahouse in the village (now called “Vanilla Garden” Happy Farmer Home) C05: “I am the first one to run this

teahouse. Our house is very close to that bridge. I think the location is very good and there are many tourists, so we set up this teahouse on the side at that time.”

Government performance and regional planning are the primary external driving forces and supports. The development of tourism is a very effective and fast method to get rid of poverty (Guo and Sun, 2016). For poor areas with weak economic foundations and better tourism development conditions, local governments often choose tourism with a low starting point for investment and development as the starting point for their poverty alleviation (Park et al., 2012). In this village, the local government urgently needs to solve the problem of backward rural development. Therefore, in 2012, Pi County passed the “Village Planning of Qinggangshu Village in Sandaoyan Town,” in which it planned to build tourist belts and organic ecological agriculture along the Baitiao and Xuyan Rivers, laying the foundation for the development of leisure tourism in Qinggangshu Village. After upgrading rural tourism planning, the unified architectural landscape and beautiful rural scenery attracted tourists from surrounding areas. With the arrival of a large number of tourists, catering and leisure requirements have emerged. Gradually, some local enterprises noted these opportunities and began to settle in Qinggangshu Village. Similarly, the presence of enterprises with strong capital, advanced management technology, and other advantages often plays an important role in developing rural tourism (Wilson et al., 2001). At present, the enterprises in Qinggangshu Village are mainly led by the government and they enter the village with the attitude of helping. The profitable rural construction and tourism development of market enterprises have emerged. Yang Weiwei (code: G1), manager of Vanilla Lake Tourism Company in Qinggangshu Village, mentioned in the interview: “We hope that local people can participate in the tourism development in the whole process. We plan to establish a platform managed by villagers, businesses, governments and enterprises and work together to promote the development of this village.”

The fieldwork and in-depth interviews clarified that the driving forces (D) of rural spatial restructuring in Qinggangshu Village are diverse. The process of spatial restructuring of Qinggangshu Village includes the local government, village cadres, villagers, tourists,

enterprises, markets, and other driving forces. Based on superior ecological resources, convenient transportation location, and other intermediary elements, each driving factor plans to seek foreseeable benefits or development, and realizes the driving role of spatial restructuring in Qinggangshu Village.

The main pressures (P) faced in tourism development in Qinggangshu Village stemmed from the interaction of multiple driving forces, environmental pollution, land desertification, labor loss, poverty, and the large urban-rural gap caused in the early stage.

Stimulated by these driving forces and pressure, the original state of Qinggangshu Village began to change. Correspondingly, the dilapidated village was redeployed under the government’s planning, and infrastructure improved with the goal of tourism development. At the same time, residents used their own courtyards and farmland as capital to participate in the construction of a new village. After the improvement of Qinggangshu Village, the beautiful landscape attracted residents from the surrounding urban area, and the increased number of tourists brought new opportunities for enterprises and villagers. During this process, rural resources began to transform into capital, and the living environment, mode of production, and income of villagers also changed significantly. Overall, the order of the village presents the initial state (S) of tourism development.

4.2. Impact (I) and responses (R) in the rural spatial restructuring of Qinggangshu Village

4.2.1. Rural restructuring of the town-village system

Usually, the restructuring of the town-village system is the political force of rural spatial restructuring. The main purposes are to clarify the direction of development of villages and towns, and rationally organize the land use and layout of these to scientifically modernize rural areas (Frisvoll, 2012; Long, 2013a; Long and Tu, 2017).

However, 2012 was a turning point and the town-village system began to reform. Qinggangshu Village was included as one of three “group micro-life” demonstration villages built by Pixian County, and as such, gained government support. To revitalize the local economy, the government changed the original town-village system of Qinggangshu Village, based on scientific rural planning, and set up the village collective economic organization in the new village and town system, creating favorable conditions for the development of rural tourism. This change ensures that Qinggangshu Village has both political and economic functions (Fig. 3). The new village layout follows the principle of “appropriate gathering and dispersing” and adopts a “small-scale, group, micro-pastoral, ecological” pastoral model (Fig. 4). Eventually, every 20–30 households were constructed in groups, the

landscape and roads were arranged in an orderly way, and 9 courtyard groups were formed. Resident C11 said:

“Now we have elected a group leader for each group. For some minor matters, we don’t go far to call for the village head. The group leader can help us negotiate and solve them, which is much more convenient.”

The construction of Qinggangshu Village was completed after one year, addressing the previous challenges of poverty and a poor environment. The living environment of farmers has also greatly improved. Following the demonstration of “pioneer farmers,” rural tourism has developed rapidly. Meanwhile, the government and tourism companies have begun to participate in the development of rural tourism. With abundant funds, keen market vision, advanced management technology, and other advantages, enterprises started formulating tourism development plans for Qinggangshu Village, standardizing the business behavior of residents and businessmen, and managing the order and style of scenic spots. Since then, Qinggangshu Village has formed an integrated development system of government, enterprises, rural elites, and villagers.

4.2.2. Rural restructuring of living space

Land use policy directly impacts rural spatial restructuring (Chen et al., 2017), wherein changes to the rural living space is an important reflection. The development of tourism in Qinggangshu Village provides an opportunity for land consolidation; the success of land consolidation also promotes and develops a foundation for the healthy development of tourism. According to Huaidong Zhang (code: Z1), secretary of the Party Committee of Sandaoyan Town:

“The reason Qinggangshu Village tourism can flourish and develop depends on the early land consolidation. The specific measure is to reclaim the scattered and idle collective construction land in the village, and then unify the houses in the village. After that, many families began to take part in Nongjiale tourism.”

In 2008, the construction of the village began to be promoted in Qinggangshu Village, and the rural collective land realized the “confirmation and certification of rights.” Rural collective land ownership, the right to use the homestead, and right to use the collective construction land were clarified, laying the foundation for later development.

In 2012, Qinggangshu Village became a “pilot demonstration village” of land reform, and began implementing comprehensive land consolidation in June 2012. Through the democratic procedures, land cost was calculated uniformly and the villagers are guided to take the homestead as shares for construction. This process was led by the town

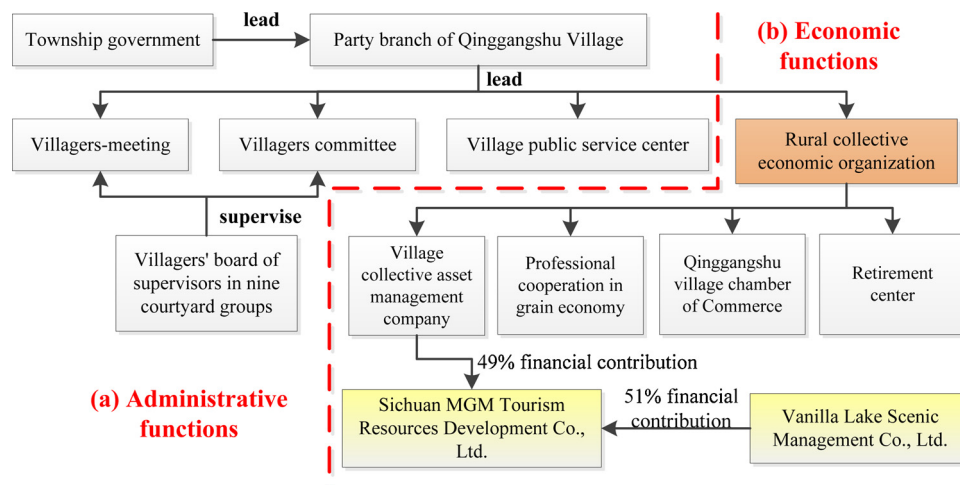


Fig. 3. The new town-village system in Qinggangshu Village.



Fig. 4. Airplane view of a “small-scale, group, micro-pastoral, and ecological” pastoral model in Qinggangshu Village.

Table 3
Land consolidation and distribution ratio of Qinggangshu Village.

Types	Area (ha)	Percent (%)
Surplus construction land	17.93	46.95
New residential land for farmers	14.07	36.82
Newly increased farmlands	0.08	0.21
Reserving industrial lands	0.93	2.44
Existing industrial and infrastructure land	5.19	13.58

and organized by the village. The specific allocation proportion is listed in Table 3. Through land consolidation and planning control, the per capita construction land was reduced from 170 to 70 square meters. Of this area, 14.07 ha of collective construction land was used to build new houses and infrastructure, and 17.93 ha of surplus collective management construction land sold through the steps of returning farmland and land acceptance. Finally, the funds from the collective land transfer were used to develop rural tourism, improve farmers' living standards, and repay financing principal and interest; the specific process is shown in Fig. 5.

This positive policy brought value to the unused land in Qinggangshu Village. Villagers now live in new houses without having spent money, which is also one success of the construction of the new village. Resident C05 said:

“This model narrows the gap between the rich and poor, as the poor or rich are assigned the same house. Therefore, this model is quite good.”

Land consolidation has greatly impacted Qinggangshu Village, and

the land use rate has increased significantly. Land consolidation became the basis for the successful development of rural tourism. By 2013, the construction of the new Qinggangshu Village was completed, and some tourist attractions and recreational spaces were also completed in this stage (Fig. 6). Through the artificial visual interpretation of high-resolution remote sensing images obtained by DigitalGlobe and CNES/Airbus, we obtained the land use and land cover data of Qinggangshu for 2002 (Fig. 7a) and 2017 (Fig. 7b). It was found that compared to 2002, in 2017, more diversified land use types had appeared, and there were more public management and service land (PM&SL) (Fig. 7b), for example, parking lots and a fitness square. Significant changes are taking place in people's lives, the function of Qinggangshu Village has gradually changed to accommodation, shopping, catering, and entertainment to fulfill the needs of tourists, which also marks the formation of Qinggangshu Village's tourism space.

4.2.3. Rural restructuring of production space

With the intensive use of the free land, street land, and scattered woodland in the village, the production mode of villagers has changed, and the production space with tourism gradually formed. In the past, Qinggangshu Village was a typical agricultural village without a leading industry. According to the land use statistics in Fig. 7a, farmland accounted for 71 % of the village in 2002 (Fig. 8). Villagers earned money by planting land, selling vegetables, melons and fruits, and other small amounts of primary agricultural products. This type of household production makes the factors of production lack linkage and structure, which cannot meet the needs of life and results in long-term poverty. In the interview, villager C07 noted:

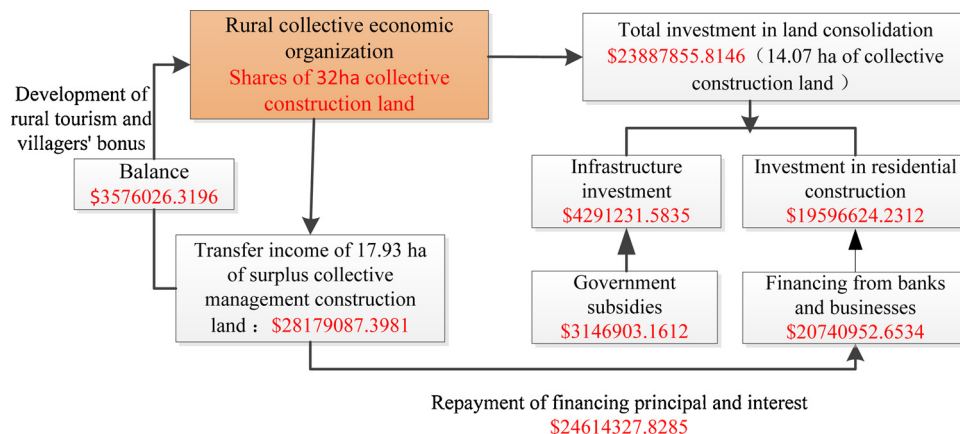


Fig. 5. Land consolidation mechanism in Qinggangshu Village.



Fig. 6. Photos of the rural living space.

“In the past, we used to grow crops, and did not get much income.”

When restructuring the village, capital gained from selling land use rights was used to build new homes for residents. Villagers’ original homestead area and housing construction were transformed into new houses in accordance with regulations. The villagers got new houses without spending money, which was one success of the construction of Qinggangshu Village. During this period, the rural industrial structure was restructured, and farming no longer served as the only source of villagers’ income. According to the land use statistics in Fig. 7b, the landscape types of new villages are more diverse, providing good conditions for rural tourism (Fig. 9).

In addition, rural elites always play a positive role in rural economic development (Li et al., 2019). In the early stage of tourism development, some residents transformed their houses into teahouses and family entertainment for tourism reception, which became very popular. With the promotion of Qinggangshu Village’s fame, more farmers now participate in tourism. The successful demonstration of early managers played an active role in promoting the farmers. According to villager C02: “Usually, when villagers see other people making money by developing tourism, they will slowly follow suit.”

With the deepening of tourism development, higher requirements were proposed for rural tourism services. The capital gained by selling land use rights became an important fund for the establishment of the Vanilla Lake Tourism Company (Fig. 3b), which provides a good platform for the sustainable development of rural tourism. However, beyond that, local residents invested money to transform their houses into catering and leisure facilities, improved their level of management, and formulated unified catering standards.

Currently, tourism is the main industry in the village. Most villagers located in the core of the scenic spot or near the main road use their houses to participate in tourism by running a Nongjiale, renting

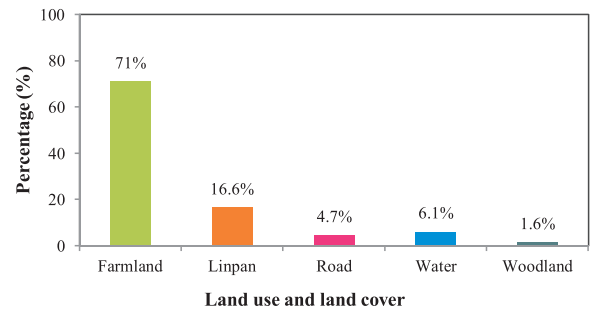


Fig. 8. Land use and land cover in 2002 (color scheme used here is as in Fig. 7).

sightseeing bicycles, owning small supermarkets, or setting up snack stands (Fig. 10a, b, d, e). Furthermore, some remote residents not engaged in rural tourism choose to work in the village (Fig. 10c).

The transformation of industry increased villagers’ income. Based on the data provided by the local government, from 2012 to 2018, the per capita disposable income of farmers increased from \$2148.04 at the beginning of the new village construction to \$4176.09 currently. The changes are shown in Fig. 11.

After a series of changes, with the emergence of tourism industry, we noticed that the tourism products of Qinggangshu are mainly focus on attracting one-day or half-day tours, thus lacking depth of experience in tourism. Most tourists are self-driving visitors who stay for a short time. This leads to serious homogeneity and single structure of leisure tourism products. To a certain extent, this will restrict the development of tourism in Qinggangshu Village in the future.

4.2.4. Rural restructuring of ecological space

The traditional rural landscape is a natural-economic-social complex ecosystem composed of villages, forests, farmland, water bodies,

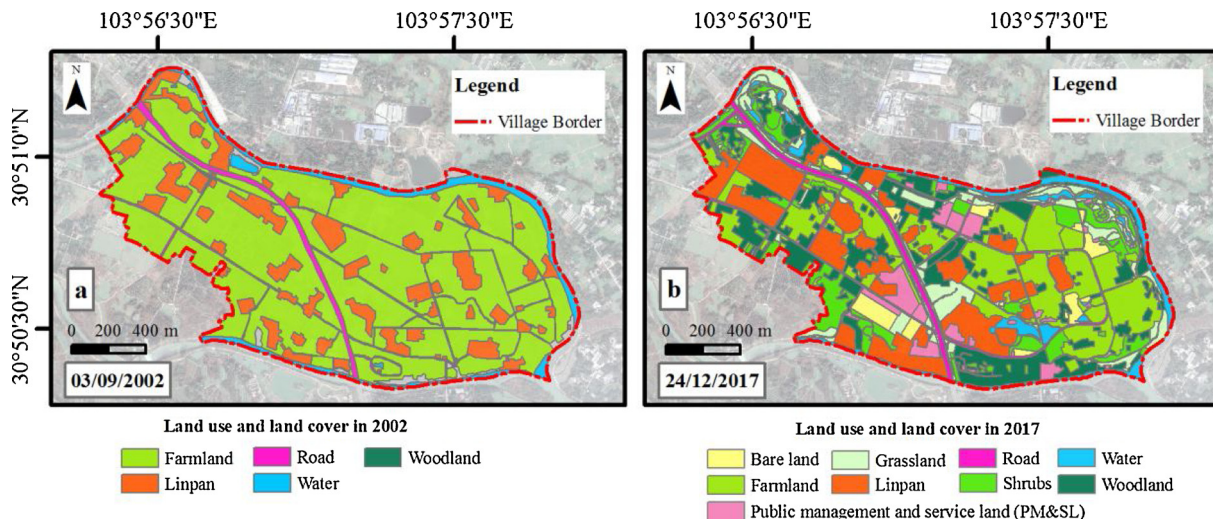


Fig. 7. Land use and land cover in 2002 and 2017, (Linpan is a unique residential form in Sichuan Province).

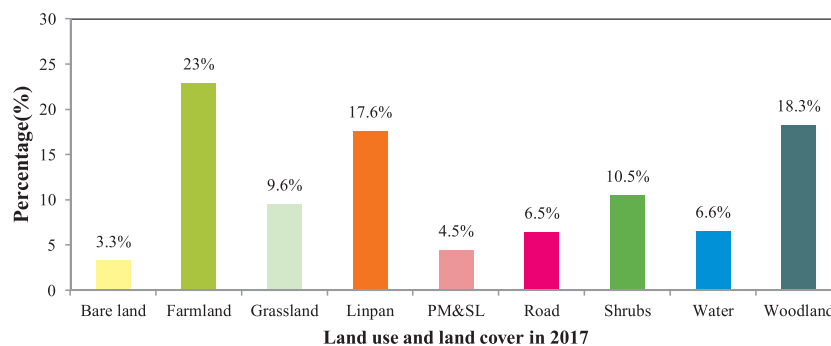


Fig. 9. Land use and land cover in 2017 (color scheme used here is as in Fig. 7).



Fig. 10. Photos showing villagers' sources of income from tourism.

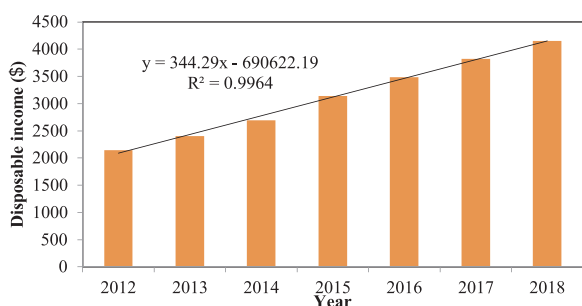


Fig. 11. Per capita disposable income of farmers in Qinggangshu Village. (X variable represents the year, and Y variable represents per capita disposable income.).

and so on. It integrates three aspects, namely the rural settlement landscape, natural ecological landscape, and agricultural productive landscape (Paquette and Domon, 2001). Of these, the agricultural productive landscape comprises the main part of the rural landscape. However, before the construction of the new village, Qinggangshu Village did not have a sustainable landscape, and the land use rate was very low. The main landscape was composed of Linpan and farmland, which had a single function and was only used to meet the basic living needs of residents. In effective rural economic development, rural

tourism plays an important role in restoring rural image and activating rural resources (Carneiro et al., 2015). In recent years, with the development of rural tourism, Qinggangshu Village has transformed from a traditional ecological space to “ecological + productive” compound space consequent to significant changes in land use types (Table 4).

The restructuring of the village landscape of Qinggangshu Village was implemented in accordance with the principles of a “small-scale, group, micro-rural and ecological” pastoral model. Under this guidance, land use forms tend to diversify. The increase in the SHDI and SHEI for 2017 (Fig. 12c) indicates that the landscape is more diverse and landscape distribution more uniform. Thus, village construction is now more appropriate. For 2017, the distribution pattern of the rural space is as a “Linpan - Tourism Facilities - Pastoral - River” (Fig. 12b). It looks like a landscape painting, completely transformed from the poverty-stricken, underdeveloped, dirty environment it once was.

Through significant land consolidation and planning, the residents have gradually received the benefits of tourism development. To ensure a sustained income, villagers actively cooperate with the government and tourism companies to protect the village landscape. Furthermore, the village hires unemployed villagers to undertake gardening work, creating a virtuous circle of economic development and environmental protection. Thus, as shown in Fig. 12b, a sustainable production landscape has gradually been created.

Table 4
Transfer matrix of land use and land cover (2002–2017) 10³ m².

2002	2017									
	Bare land	Farmland	Grassland	Linpan	PM&SL	Road	Shrubbery	Water	Woodland	Sum
Farmland	71.6	474.3	174.0	253.0	89.7	76.6	201.5	46.4	340.7	1727.8
Linpan	2.1	71.8	35.5	158.0	15.5	11.2	45.3	5.1	58.6	403.1
Road	1.6	12.4	7.5	6.9	1.5	69.1	4.8	3.0	8.5	115.3
Water	5.7	0	7.3	6.2	0.5	1.2	3.6	105.3	18.2	148.0
Woodland	0.3	0	9.2	4.9	2.6	0.2	0.7	0.3	19.7	37.9
Sum	81.3	558.5	233.5	429.0	109.8	158.3	255.9	160.1	445.7	2432.1

5. Conclusions and discussions

Observing and analyzing the process of the spatial restructuring of Qinggangshu Village, and combining the results thereof with the framework and situation of rural development in China, the following was found.

Rural spatial restructuring is the inevitable result of the development of social economy to a specific historical stage. Tourism-driven rural spatial restructuring in the metropolitan fringe is the process through which rural space is developed, designed, used, and reformed. With the rapid development of China’s economy and urbanization, various economic and social activities originally concentrated in the central urban areas are increasingly dispersed to the suburbs. Especially after the obvious spillover of leisure consumption demand in metropolitan areas, their consumption space is no longer confined to modern business places such as urban core areas, but gradually extending to leisure spaces around the metropolitan fringe. Due to the continuous growth of the rural tourism industry in Qinggangshu Village, rural space has changed to varying degrees. The scale of rural land use has increased, and unused and abandoned land is being utilized with increasing effectiveness. The functions of villages have gradually changed from single residences and agricultural production to places providing accommodation, shopping, catering, entertainment, and other functions to meet tourists’ needs, and the villagers gained increased employment opportunities.

Rural spatial restructuring is based on presupposed goals and concepts, and implemented through human intervention and regulation of the system’s elements, structure, and functions to ultimately transform the rural regional system from a non-benign to benign state. Tourism development connects social relations and human environment

resources in rural areas, injects new vitality into rural areas, the traditional rural structure has been deconstructed, thus transforming the rural space into a region with tourism value and market significance (Jiang et al., 2014). Admittedly, the lack of in-depth experience in Qinggangshu Village means that tourists have a low rate of re-visiting. Considering tourists’ requirements for the culture and experience of leisure and recreation space, the village should focus on improving the service function in the production space, create a characteristic culture, and provide in-depth experience activities for tourists. Recommendations for rural spatial restructuring and tourism are discussed below.

5.1. The inevitability of rural spatial restructuring in the metropolitan fringe in China

Resource natural endowment and era’s development demand are the basic premise of tourism-driven rural spatial restructuring. Against the background of rapid urbanization and rural revitalization strategy, tourism-driven rural spatial restructuring is a process of the comprehensive influence of resources, the market, government, residents, and enterprises (Fleischer and Tchetchik, 2005). China is now in the period of economic transformation. Due to its rapid economic growth over the years, China has entered an era driven by domestic demand, which will become an important driving force for rural transformation in the future (Cheng and Zhang, 2020). Especially with the spillover of leisure consumption demand in metropolitan areas, the rural spatial structure has undergone significant changes. The countryside in the metropolitan fringe is the foundation of urban development. It provides population, land, and resources for urban development and has a decisive influence on the future of urban development. It is also easier for the government to focus on these areas; however, these advantages are lacking in some

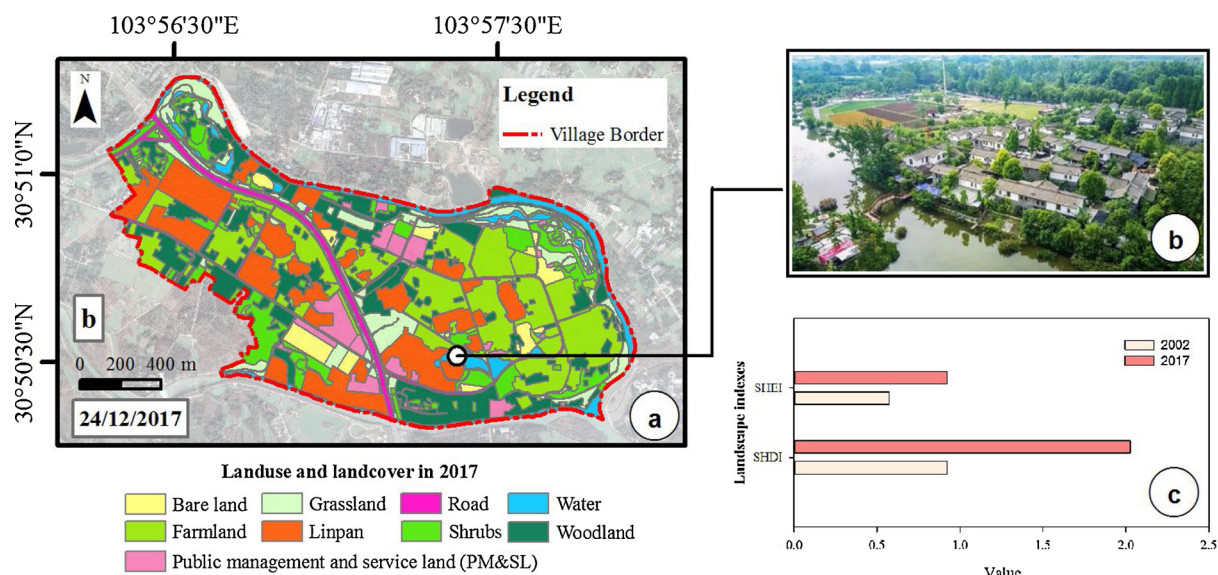


Fig. 12. Bird’s-eye view of the landscape and landscape index.

remote rural areas. Various types of rural areas exist in China (Li et al., 2016); due to their unique location, the villages in the metropolitan fringe will have different development routes and modes, compared to traditional villages.

It is worth noting that this study describes the impact of domestic tourism on the rural space around the metropolis. With the increase of inbound tourists in the countryside, the strong intervention of tourism consumption and the increasing demand of tourists for the countryside would have an obvious impact on the original social relations, local culture and moral values, which would be an important aspect of future research.

5.2. Flexible land use policies and scientific planning are essential

Land consolidation is an effective way to improve land use efficiency (Skenicka, 2006), and a direct way to promote rural spatial restructuring. With the rise of rural tourist destinations in metropolitan areas, the interaction between cities and villages is becoming more frequent. The continuous influx of tourists has greatly accelerated rural land consolidation. In fact, rural spatial restructuring in Qinggangshu Village is inseparable from early land consolidation and overall planning. In the early stage of tourism development, to enhance the reception capacity of rural tourism by renovating farmland, water, roads, forests, villages, and landscapes, the government changed the traditional agricultural production mode to help farmers achieve employment, improve the ecological landscape environment to make the rural area more attractive, and transformed traditional dwellings to create better living spaces for farmers. Currently, land consolidation activities are drastically changing the land use patterns of rural areas in China (Long et al., 2011). However, unreasonable land consolidation will lead to a “tragedy of the commons” such as a rigid rural space, single ecological environment, waste of land, and weakening of traditional culture. Therefore, formulating a flexible land policy and dynamic land use change detection system according to the characteristics of rural development is an important part of sustainable rural development.

5.3. Continuous attention should be paid to rural social and economic restructuring

Tourism can also negatively affect rural areas (Nikolaos, 2019). For example, with the booming development of tourism in Qinggangshu Village, an increasing number of farmers are engaged in Nongjiale, and unhealthy competition has gradually emerged. At the same time, the culture brought by urban tourists has impacted traditional rural culture. To compete for more customers, conflicts between villagers are escalating, and the concept of life and value system rooted in local society have gradually collapsed. In addition, the objects of cultural identity are disappearing, and intergenerational cultural exchanges in rural areas have been replaced by money-centered fetishism. Through this change, Qinggangshu Village has entered the stage of social and economic restructuring. Facing different demands and diverse value choices, the biggest challenge for Qinggangshu Village now is how to deal with the identity crisis of rural culture. Through interviews with village cadres, we know that the government and companies are working to find new opportunities, innovative management models, and measures to achieve sustainable development of culture. Next, the study will continue to follow up on the process of the rural social and cultural restructuring of Qinggangshu Village, and explore a more comprehensive and reasonable mechanism for rural development.

CRedit authorship contribution statement

Chunliu Gao: Conceptualization, Investigation, Methodology, Writing - original draft, Writing - review & editing. **Li Cheng:** Conceptualization, Investigation, Supervision, Resources, Writing - original draft, Writing - review & editing, Project administration.

Acknowledgments

The authors would like to thank all colleagues who participated in this study. This research was supported by the special funds for basic scientific research services of the Central University (No. 2012017yjsy137), National Natural Science Foundation (No. 40971297), National Social Science Fund of China (18FGL015), Innovation Spark Project of Sichuan University (2018hhs-57), Sichuan University Cluster for Regional History and Frontier Studies (2018-0332), Major Projects of the National Social Science Foundation (17ZDA044) and Interdisciplinary Research and Innovation Project of Sichuan University (XKQKXK04).

References

- Beyers, W.B., Nelson, P.B., 2000. Contemporary development forces in the non-metropolitan west: new insights from rapidly growing communities. *J. Rural Stud.* 16, 459–474.
- Carneiro, M.J., Lima, J., Silva, A.L., 2015. Landscape and the rural tourism experience: identifying key elements, addressing potential, and implications for the future. *J. Sustain. Tour.* 23, 1217–1235.
- Carrion-Flores, C., Irwin, E.G., 2004. Determinants of residential land-use conversion and sprawl at the rural-urban fringe. *Am. J. Agric. Econ.* 86, 889–904.
- Chen, C., Gao, J., Chen, J., 2017. Institutional changes, land use dynamics, and the transition of rural settlements in suburban China: a case study of Huishan District in Wuxi city. *Habitat Int.* 70, 24–33.
- Cheng, L., Zhang, J., 2020. Is tourism development a catalyst of economic recovery following natural disaster? An analysis of economic resilience and spatial variability. *Curr. Issues Tour.* 1–22. <https://doi.org/10.1080/13683500.2019.1711029>.
- Dahms, F., 1991. St. Jacobs, Ontario: from declining village to thriving tourist community. *Ontario Geography* 36, 1–13.
- Fleischer, A., Felsenstein, D., 2000. Support for rural tourism: Does it make a difference? *Ann. Tour. Res.* 27, 1007–1024.
- Fleischer, A., Tchetchik, A., 2005. Does rural tourism benefit from agriculture? *Tour. Manag.* 26, 493–501.
- Frisvoll, S.J., 2012. Power in the production of spaces transformed by rural tourism. *J. Rural Stud.* 28, 447–457.
- Gao, J., Wu, B., 2017. Revitalizing traditional villages through rural tourism: a case study of Yuanjia Village, Shaanxi Province, China. *Tour. Manag.* 63, 223–233.
- Gao, H., Zhang, J., Luo, Z., 2014. Renaissance or alienation? Spatial transformation of rural space of metropolis fringe area driven by consumer culture: empirical observation on Dashan Village of Gaochun International Slow City. *Urban Plan. Int.* 29, 68–73.
- Gibson, C., 2010. Semi-structured and unstructured interviewing: a comparison of methodologies in research with patients following discharge from an acute psychiatric hospital. *J. Psychiatr. Ment. Health Nurs.* 5, 469–477.
- Guo, Z., Sun, L., 2016. The planning, development and management of tourism: the case of Dangjia, an ancient village in China. *Tour. Manag.* 56, 52–62.
- He, J., Li, H., Qin, W., 2013. Rural tourism in China. *Tour. Manag.* 32, 1438–1441.
- Hoggart, K., Paniagua, A., 2001. What rural restructuring? *J. Rural Stud.* 17, 41–62.
- Hoskins, W.G., 1955. *The Making of the English Landscape*. Hodder & Stoughton, London, pp. 58–80.
- Hu, S., Liu, Y., Xu, K., 2011. Hollow villages and rural restructuring in major rural regions of China: a case study of Yucheng City, Shandong Province. *Chin. Geogr. Sci.* 21, 354–363.
- Jago-On, K.A.B., Kaneko, S., Fujikura, R., Fujiwara, A., Imai, T., Matsumoto, T., Zhang, J., Tanikawa, H., Tanaka, K., Lee, B., 2009. Urbanization and subsurface environmental issues: an attempt at DPSIR model application in Asian cities. *Sci. Total Environ.* 407, 3089–3104.
- Jiang, J., Wu, X., Lu, Y., 2014. Towards a better understanding of the relationships between tourism involvement and place attachment: evidence from rural tourism destinations in China. *Int. J. Tour. Anthropol.* 3, 245.
- Kawate, T., 2005. Rural revitalization and reform of rural organizations in contemporary rural Japan. *J. Rural. Probl.* 40, 393–402.
- Kieselbach, S.R., Long, P.T., 1990. Tourism and the rural revitalization movement. *Parks Recreation* 25, 62–66.
- Kiss, E., 2000. Rural restructuring in Hungary in the period of socio-economic transition. *GeoJournal* 51, 221–233.
- Latifi, S., Fathi, H., Seyedi, M., Movahedi, R., 2010. The role of micro and medium industries in rural sustainable development: case of the villages around Sanandaj city. *Adv. Synth. Catal.* 351, 903–919.
- Li, Y., 2019. Tourism-driven urbanisation in China's small town development: Yiren Town, China. *Int. J. Tour. Anthropol.* 7, 132–156.
- Li, P., Ryan, C., Cave, J., 2016. Chinese rural tourism development: Transition in the case of Qiyunshan, Anhui. – 2008–2015. *Tour. Manag.* 55, 240–260.
- Li, Y., Fan, P., Liu, Y., 2019. What makes better village development in traditional agricultural areas of China? Evidence from long-term observation of typical villages. *Habitat Int.* 83, 111–124.
- Li, H., Zhang, X., 2012. A review and trend on rural settlement geography abroad. *Human Geography* 27, 103–108.
- Liu, Y., 2018. Introduction to land use and rural sustainability in China. *Land Use Policy*

- 74, 1–4.
- Liu, Y., Li, Y., 2017. Revitalize the world's countryside. *Nature* 548, 275–277.
- Liu, Y.S., Yang, Z., 2015. Challenges and countermeasures for beautiful countryside construction in China. *J. Agric. Resour. Environ.* 32, 97–105.
- Liu, Y., Liu, Y., Chen, Y., Long, H., 2010. The process and driving forces of rural hollowing in China under rapid urbanization. *J. Geogr. Sci.* 20, 876–888.
- Liu, Y.S., Yan, B., Wang, Y.F., 2016. Urban-rural development problems and transformation countermeasures in the new period in China. *Econ. Geogr.* 36, 655–666.
- Lobley, M., Potter, C., 2004. Agricultural change and restructuring: recent evidence from a survey of agricultural households in England. *J. Rural Stud.* 20, 499–510.
- Long, H., 2013a. Land consolidation and rural spatial restructuring. *Acta Geographica Sinica* 68, 1019–1028.
- Long, H., 2013b. Land consolidation and rural spatial restructuring. *Acta Geographica Sinica* 68, 1019–1028.
- Long, H., Liu, Y., 2016. Rural restructuring in China. *J. Rural Stud.* 47, 387–391.
- Long, H., Tu, S., 2017. Rural restructuring: theory, approach and research prospect. *Acta Geographica Sinica* 72, 563–576.
- Long, H., Li, Y., Liu, Y., 2009. Analysis of evolutive characteristics and their driving mechanism of hollowing villages in China. *Acta Geogr. Sin.* 64, 1203–1213.
- Long, H., Liu, Y., Li, X., Chen, Y., 2010. Building new countryside in China: a geographical perspective. *Land Use Policy* 27, 457–470.
- Long, H., Zou, J., Pykett, J., Li, Y., 2011. Analysis of rural transformation development in China since the turn of the new millennium. *Appl. Geogr.* 31, 1094–1105.
- Maitland, R., Newman, P., 2004. Developing metropolitan tourism on the fringe of central London. *Int. J. Tour. Res.* 6, 339–348.
- Marsden, T., Lowe, P., Whatmore, S., 1990. *Rural Restructuring: Global Processes and Their Responses*. David Fulton Publishers Ltd., London.
- Mctate, E.A., Leffler, J.M., 2017. Diagnosing disruptive mood dysregulation disorder: integrating semi-structured and unstructured interviews. *Clin. Child Psychol. Psychiatry* 22, 187–203.
- National Bureau of Statistics of China (NBSC), 2017. *China Statistical Yearbook 2017*. China Statistics Press, Beijing.
- National Bureau of Statistics of China (NBSC), 2019. *China Statistical Yearbook 2019*. China Statistics Press, Beijing.
- Nelson, P.B., 2001. Rural restructuring in the American West: land use, family and class discourses. *J. Rural Stud.* 17, 395–407.
- Nikolaos, B., 2019. Rural tourism and residents' well-being in Cyprus: towards a conceptualised framework of the appreciation of rural tourism for islands' sustainable development and competitiveness. *Int. J. Tour. Anthropol.* 7 (1), 60–86.
- Paquette, S., Domon, G., 2001. Trends in rural landscape development and socio-demographic recomposition in southern Quebec (Canada). *Landsc. Urban Plan.* 55, 215–238.
- Park, D.B., Lee, K.W., Choi, H.S., Yoon, Y., 2012. Factors influencing social capital in rural tourism communities in South Korea. *Tour. Manag.* 33, 1511–1520.
- Sharpley, R., 2002. Rural tourism and the challenge of tourism diversification: the case of Cyprus. *Tour. Manag.* 23, 233–244.
- Sklenicka, P., 2006. Applying evaluation criteria for the land consolidation effect to three contrasting study areas in the Czech Republic. *Land Use Policy* 23, 502–510.
- Svarstad, H., Petersen, L.K., Rothman, D., Siepel, H., Wätzold, F., 2008. Discursive biases of the environmental research framework DPSIR. *Land Use Policy* 25, 116–125.
- Terluin, I.J., 2003. Differences in economic development in rural regions of advanced countries: an overview and critical analysis of theories. *J. Rural Stud.* 19, 327–344.
- Tscherning, K., Helming, K., Krippner, B., Sieber, S., Paloma, S.G.Y., 2012. Does research applying the DPSIR framework support decision making? *Land Use Policy* 29, 102–110.
- Tu, S., Long, H., Zhang, Y., Ge, D., 2018. Rural restructuring at village level under rapid urbanization in metropolitan suburbs of China and its implications for innovations in land use policy. *Habitat Int.* 77, 143–152.
- Vafadari, K., 2013. Tourism and the revival of rural Japan: the case of Satoyama development in Ishikawa Prefecture, Japan. *Asia Pac. World* 4 (2), 103–121.
- Wang, P., 2013. A study on commodification in rural space and the relationship between urban and rural areas in Beijing City. *Acta Geogr. Sin.* 68, 1657–1667.
- Wilson, S., Fesenmaier, D.R., Fesenmaier, J., Es, J.C.V., 2001. Factors for success in rural tourism development. *J. Travel. Res.* 40, 132–138.
- Woods, M., 2005. *Rural Geography Processes Responses & Experiences in Rural Restructuring* Vol. 7. pp. 494–496.
- Wu, B.H., Huang, Z.W., Ma, X.M., 2004. Spatial structure of rural tourism attractions in suburban areas of China. *Scientia Geogr. Sin.* 24 (6), 757–763.
- Xi, J., Zhao, M., Wang, K., Chen, P., 2013. Land use evolution of growth tourism-town from 1986 to 2010: a case study of Sanpo town in Yesanpo tourism attraction in Hebei province. *Geogr. Res.* 32, 11–19.
- Xi, J., Wang, X., Kong, Q., Zhang, N., 2015. Spatial morphology evolution of rural settlements induced by tourism. *J. Geogr. Sci.* 25 (4), 497–511.
- Yang, R., Liu, Y., Long, H., Zhang, Y., 2015. Research progress and prospect of rural transformation and reconstruction in China: paradigms and main content. *Prog. Geogr.* 34 (8), 1019–1030.
- Yao, G., Xie, H., 2016. Rural spatial restructuring in ecologically fragile mountainous areas of southern China: a case study of Changgang Town, Jiangxi Province. *J. Rural Stud.* 47, 435–448.
- Ye, X., 2010. China's urban-rural integration policies. *J. Curr. Chin. Aff.* 38, 117–143.
- Zhang, L., Rozelle, S., Huang, J., 2001. Off-farm jobs and on-farm work in periods of boom and bust in rural China. *J. Comp. Econ.* 29, 505–526.