


## Article

# Decoding Rural Space Reconstruction Using an Actor-Network Methodological Approach: A Case Study from the Yangtze River Delta, China

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**Abstract:** Using actor-network theory (ANT), this paper explores the process and mechanisms of rural space reconstruction in China in the post-urbanization era. In the context of urban–rural integration development in China, villages have become diversified. They are not only the living spaces of villagers, but they are also consumption spaces of urban residents. Through a case study of a typical village in the Yangtze River Delta, this study highlights that the actor-network of rural spatial reconstruction includes heterogeneous actors, such as the village committee, villagers, governments, tourism enterprises, makers, housing, and landscape—among which the Lishui Government is the key actor. Therefore, this paper argues that China’s rural space reconstruction is greatly dependent on external resources such as government policy support or enterprise investment. In the future, promoting public participation will be necessary to realize villages’ endogenous transformation and development.

**Keywords:** Shishanxia; rural China; spatial reconstruction; actor-network theory; public participation



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## 1. Introduction

For a long time, China’s agricultural and rural development has been lagging. Moreover, agricultural productivity and farmers’ living standards are relatively low. Since the reform and opening, rural development has made some progress, but there is still a big gap with the city. In the early 1990s, with the rapid development of urbanization and industrialization, rural population outflow occurred at high speed, and the hollowing out of rural areas became more and more serious. As the world’s largest developing country, China is experiencing drastic economic changes while rural areas are also undergoing drastic changes. Problems such as population loss, idle land, environmental pollution, and cultural decline have emerged one after another [1,2]. Due to the massive loss of rural population, houses and land in rural areas have been idle, economic development has slowed, the industrial structure has become backward, and local culture has declined. Conversely, with the rapid development of the urban economy, the income of urban residents has increased rapidly, and the gap between urban and rural areas has widened. Entering the 21st century, the tourism consumption demand of urban residents has increased rapidly, and the investment demand of enterprises has expanded quickly as well. Fortunately, with policies such as ‘new countryside construction’, ‘countryside tour’, and ‘beautiful countryside construction’, the imbalance between urban and rural areas has been decreased. In the economically developed areas of Southern Jiangsu, agriculture, villages, and farmers have obtained funds and resources. The local government has continued to increase investment in agricultural and rural infrastructure. Moreover, interconnection has been realized between the infrastructures of cities and villages. All localities give full play to the fundamental role of the market in the allocation of resources and guide the flow of urban capital, talents, and technology to rural areas. Therefore, the exchange of elements

between urban and rural areas is becoming more and more frequent. The integration of urban and rural areas has been preliminarily realized.

According to the report of the 19th National Congress of the Communist Party of China, the principal social contradiction has been transformed into ‘the contradiction between the people’s growing needs for a better life and unbalanced and insufficient development’. The unbalanced and inadequate development of urban and rural areas has become a prominent social contradiction that seriously restricts farmers from sharing reform and development achievements. For China, promoting the integration of urban and rural development is a crucial way to achieve rural revitalization and modernization, and it is also an important symbol of national modernization. Thus, against the background of urban–rural integration development, the ‘beautiful countryside construction’ policy and rural revitalization strategy, rural space is facing transformation and reconstruction. Spatial reconstruction in rural China is the optimization and restructuring of production space, living space, and ecological space [3].

Since the 1950s, developed countries have experienced urbanization and counter urbanization, and rural space has been characterized by decline and revival, and then transformation and reconstruction [4]. The dramatic changes in rural areas have aroused the interest of scholars in the fields of geography, sociology, and economics. In 1976, the International Geographic Union established the Commission on Rural Geography. Thus, the concept of rural spatial reconstruction appeared earlier in European and American geographers’ discussions on rural development and change than it did in China [5]. After the 1970s, the inflow of population from urban areas, due to counter urbanization, has changed the rural population and social structure, resulting in colossal consumption demand. Rural development is gradually driven by consumption. The leading industry begins to shift from agriculture to the service industry; the rural production function changes to the consumption function of leisure, tourism, and education; then the rural production landscape changes to the consumption landscape [6–8].

After studying the characteristics of rural spatial evolution in the western United States, Nelson proposed the ‘Economy-Land-Population’ three forces model. The model considers that the development of the local economy, the interaction of residents, their land, and immigrants in rural areas are the main factors that cause rural spatial change in this region. According to Nelson, external population migration is the main driving force of regional change, and it is human activities that continually change the local urban and rural landscape [9]. With the postmodern turn, cultural turn, and introduction of post-structuralism in geography, geographers extended their research to the non-material field, and they paid attention to the symbolic meaning of culture [10]. ‘Rurality’ is a relatively vague social representation. Rurality is highly related to the diversity of rural landscape, which determines the attraction of the village to tourists [11]. Some researchers suggest that the countryside is the integration of social representations of the rural [12,13]. Murdoch and others proposed the concept of ‘post-rural’ from a postmodernist perspective, emphasizing the production of meanings [14], while Jules argues that media and the internet are exerting a more and more profound influence in the process of rural change [15]. Taking Britain as an example, Hoggart and others elaborated on the concept of rural restricting, which gave us a lot of enlightenment [16]. Woods considers that rurality is the core characteristic of the countryside, and rurality is constituted by rural residents, immigrants, workers, tourists, policymakers, scientific researchers, the natural environment, social culture, and other participants [17]. Thus, the village may be regarded as a heterogeneous space composed of different participants according to their wishes and experiences, and its changes may be seen as the result of the network of heterogeneous participants.

Meanwhile, many ‘agri-tainment’ restaurants, sightseeing, and picking gardens have appeared in the economically developed areas of China since the 1990s, especially in the areas surrounding the metropolis. In the early stages, many researchers discussed the impact of rural tourism on rural areas. They found that it improved the rural living environment, but it also destroyed the stability of rural society [18,19]. In recent years, with the decline

of farmhouse entertainment, more and more researchers have begun to pay attention to the evolution and reconstruction of rural settlements, focusing on the classification of rural settlements at the county, town, or other higher levels, and then putting forward suggestions on optimization of rural settlements' distribution [20–22]. Some researchers have also identified rural settlement forms and simulated the reconstruction process of rural settlements using spatial mechanics theory, symbiosis theory, and weighted Voronoi diagrams [23–25].

In addition, some researchers have analyzed the process of rural space reconstruction from a case study perspective, and they have considered that external factors such as urban culture and the consumer economy are the main factors driving rural space reconstruction. Wang and Wang analyze a wide range of non-agricultural economic activities in the rural areas around Beijing from the perspective of post-productivism [26]. They conclude that the commercialization of rural space results from the rural adaptation to urban consumerism and habits, leading to closer and closer interaction between urban and rural areas. Based on the theory of spatial production, Gao and others carried out an empirical observation of Dashan Village in Gaochun, Nanjing, revealing the process of reproduction of rural space driven by consumer culture, and they proposed that the urban–rural relationship in China is changing from explicit deprivation to implicit discipline [27]. Some researchers have also studied rural spatial reconstruction from the perspective of dissipative structure theory or local market expansion [28,29]. However, the studies mentioned above pay more attention to the impact of external factors on rural spatial reconstruction, while less attention is paid to rural endogenous factors, such as residents' initiative, self-organization, and the natural environment.

Generally speaking, most of the existing research on rural spatial reconstruction relates to settlement optimization and the impact of urban consumer culture on rural areas. However, what is the impact of endogenous factors on village spatial reconstruction? What are the micro-dynamic mechanisms of rural space reconstruction? These questions remain to be answered.

Based on actor-network theory (ANT), this paper regards the village as a kind of actor-network space, which is a complex of 'space of places' and 'space of flows' [30]. The reconstruction of rural space is considered the result of a heterogeneous network formed by different participants.

## 2. Spatial Reconstruction in Rural China

### 2.1. 1980s–2010s

From the 1980s to the beginning of the 21st century, rural spatial reconstruction in the Yangtze River Delta may be divided into the 'Sunan Pattern' and 'Zhouzhuang Pattern'. In the era of industrialization, the 'Sunan Pattern' has achieved great success, and its essence may be considered the industrial reconstruction of rural space. Under the 'Sunan Pattern', idle land and housing in villages are the focus for the construction of industrial production space. Some villagers transform their houses into workshops, rental accommodation, and other spaces. The industrial landscape is embedded in the traditional rural landscape, and the rural space is reconstructed. In this case, the goal of rural spatial reconstruction is to obtain industrial profits, improve the income of village communities and individual villagers, objectively narrow the gap between urban and rural areas, and promote the development of urban–rural integration. Gradually, the relationship between rural and urban is becoming closer and closer, and the rural landscape is becoming more and more similar to the urban landscape. In some places, the original buildings of villages are demolished to make way for real estate development, and then the original land is made into urban landscape to sell to citizens. The rural landscape is completely transformed into an urban landscape. In contrast, some other villages have realized a new round of spatial reconstruction through the use of natural landscape resources, and historical and cultural resources, for tourism development.

In the ‘Zhouzhuang Pattern’, villages generally have rich historical and cultural resources. By restoring the historical features of villages, the village space is transformed from the production and living space of villagers to the viewing and consumption space of tourists. Zhouzhuang Ancient Town and Wuzhen are two examples of the ‘Zhouzhuang Pattern’. Zhouzhuang Town, located in Kunshan City, Jiangsu Province, has unique cultural heritage such as Shen Wansan’s former residence, the Quanfu temple, and the ancient Shuangqiao bridge. In the 1980s, Zhouzhuang began to develop tourism. Relying on its rich historical and cultural resources and water features, Zhouzhuang renovated the traditional dwellings and revealed their ancient appearance. At present, it is a national level 5A scenic location. Wuzhen started late, but its spatial reconstruction is more representative. Wuzhen, located in Tongxiang City, Zhejiang Province, is the venue for the Wuzhen Drama Festival, World Internet Conference, and other international events. During the Ming and Qing Dynasties, Wuzhen was a famous town to the south of the Yangtze River, and it had many ancient buildings. At the end of the last century, Wuzhen began to develop tourism and renovated the Dongzha and Xizha areas. In the process of renovation, Wuzhen used remaining ancient building materials to repair the ancient dwellings. Moreover, water, electricity, and other infrastructures were put underground, which not only retained the traditional style of Wuzhen, but also modernized ancient buildings and made them livable. The transformation of Wuzhen from modern production and living space to historical space and consumption space constitutes a protective space reconstruction. The spatial reconstruction of Tongli Town, Xitang Town, Luzhi Town, and other ancient villages might also be regarded as typical examples of the ‘Zhouzhuang Pattern’.

## 2.2. 2010s to Date

In the past ten years, the concepts of ‘beautiful countryside’ and ‘characteristic town’ have gradually ascended, and they have been involved in the reconstruction of rural space. The focus of ‘beautiful countryside’ construction lies in rural environmental improvement, especially the centralized treatment of domestic garbage and sewage. Some villages use rural landscape resources to develop rural tourism, meaning a rural reconstruction from the production and living space of villagers to the consumption space of citizens. The concept of the ‘characteristic town’ originated in Zhejiang Province, and its core lies in support of characteristic industries. Recently, there has been a seemingly endless emergence of homestay towns and resort towns, some of which are the result of rural space reconstruction.

Against the background of urban–rural integration development, the rural space in economically developed areas—especially the periphery of the metropolis—is rapidly reconstructed. With the geographical advantage of being close to the metropolis, these rural areas are the leading destinations for urban residents’ short-distance travel and vacation, which underpin the consumption demand for rural tourism. In the early stages, some rural residents provided rural life experiences for urban consumers by setting up ‘agri-tainment’ restaurants and picking gardens to meet leisure consumption needs while maintaining the original appearance of the village. Later, with the increase in tourists, the original village facilities could not meet the needs of tourists for food and accommodation. Some villages have been transformed into ‘resorts’ by moving out entire village populations, demolishing the original villagers’ houses, and building various tourism service facilities such as hotels, restaurants, shops, and landscapes. In this case, the village is no longer the production and living space of villagers but is completely transformed into the consumption space of tourists, and the rurality of the village is damaged. Yet, the rurality embodied in villagers, land, houses, landscape, folk customs, and traditions is the core value of rural tourism, and the loss of rurality will make rural tourism unsustainable.

Conversely, Shishanxia village in Lishui insists on maintaining its rurality. On the premise of keeping the original spatial pattern unchanged, the characteristic ‘1980s’ cultural village is reproduced through the creative renovation and restoration of old houses, which retains and restores its rural character to the maximum extent.



### 3. Theoretical Framework

#### 3.1. Post-Structuralism Ontology

From the perspective of structuralism, rural space is static, local, and structured. Structuralism pays more attention to the abstraction of elements in the geographical system and the logical structure behind them, while it pays rare attention to the early formation and dynamic change of systems, and it lacks attention to the extension of space and the interaction between the same elements [31]. Post-structuralism deconstructs the geographic system from the static and structured framework and regards it as a dynamic, active, and open system [32]. To some extent, post-structuralism makes up for the neglect of system dynamics and openness in human geography. Based on the ontology of post-structuralism, this study focuses on system dynamics and openness and establishes a heterogeneous actor network for Shishanxia's spatial reconstruction.

#### 3.2. Actor-Network Theory

Actor-Network Theory (ANT) was proposed by French sociologists Bruno Latour and Michel Callon in the 1980s [33]. Based on the principle of generalized symmetry, ANT considers that 'human' and 'non-human' factors have universal relevance, and it constructs the network of heterogeneous behavior subjects in a structured way [34]. The core concepts of actor-network theory are as follows [35]:

1. Actor. Traditionally, 'actor' refers to a human being. However, based on the generalized symmetry principle of ANT, non-human entities can also be regarded as actors. There is no distinction between subject and object, nature, and society in the actor-network.
2. Network. In ANT, the network is the image used to describe the overall association of various actors. It is the reflection of objective existence and cannot be directly perceived by human beings. The actor-network may be regarded as an interest alliance composed of heterogeneous actors.
3. Translation. Translation refers to integrating the problems and concerns of different actors, which is the key to constructing an actor-network. Translation usually consists of four parts: problem presentation, interest giving, recruitment, and mobilization.

In essence, the actor-network is the activity and process in which heterogeneous actors reach an interest alliance in solving problems [36]. ANT treats human and non-human actors equally. The concept of a 'network' can vividly describe the mechanisms of interaction between heterogeneous actors, and that of 'translation' can reflect the dynamic spatial transformation process. In the spatial reconstruction of Shishanxia, scattered and nonstructural forces, such as individual initiative, and the structural power of government and the village committee have the effect of changing spatial structure. Thus, ANT provides a novel analytical framework for studying rural spatial reconstruction involving the participation of heterogeneous agents [37].

#### 3.3. The Production of Space

The theory of spatial production was put forward by Lefebvre, who believed that the mode of production of capitalism has been transformed from 'the production of things in space' to 'the production of space itself' [38]. Different from the traditional view that 'space' is regarded as a static 'container' or 'field', the theory of spatial production defines and expands the definition of space in a philosophical way [39]. Lefebvre pointed out that power and capital are the core driving forces for the production of urban space and proposed the 'space ternary dialectics', which refers to the dialectical unity of spatial practice, representations of space, and spaces of representation, or physical space, spiritual space and social space [40].

The theory of spatial production was born on the background of the urban crisis in the 1970s and was first applied in the study of urban problems. Many researchers regard the process of urbanization as the production process of urban space and believe that the production of space is accompanied by social transformation and political reconstruction [41]. Bao took Xintiandi shopping mall as an example to study the influence of

capitalist consumption culture on the production of urban space in China and pointed out that the demand of elite class dominates the production of urban space in China [42]. Most studies on the production of China's urban space focus on old city reconstruction, urban renewal, and new urban areas (NUDs) and found that the Chinese-style 'urban growth alliance' jointly constructed by local governments and developers plays a leading role in the process of spatial production [43–46]. With the continuous expansion of capitalism in rural areas, the theory of spatial production has been applied to the study of rural spatial change. Li and others took the spatial reconstruction of rural settlements in southern Jiangsu as an example and found that power plays a leading role in the reproduction of rural space [47]. In addition, the reconstruction of rural space is not only a process of reshaping the external landscape environment but also a process of reproduction of rural social space, in essence [48]. External capital is of great significance to rural spatial production, while power, transportation, and other factors also play a role [49].

In general, spatial production theory can well describe the process and characteristics of spatial change and has broad application space in the study of urban and rural spatial change under the influence of capitalist consumption culture. However, spatial production theory often presupposes capital intervention as background. This is not consistent with the characteristics of all cases, such as Shishanxia Village in this study.

### 3.4. Theoretical Suitability of ANT

Since it was first put forward, ANT has been widely used in research on nature and society and across fields such as Sociology of Scientific Knowledge (SSK), communication research, innovation networks, and translation studies. In the 21st century, there has been a wave of scholarship reconstructing the theoretical system of tourism studies. The spatial perspective that focuses on tourism destinations has replaced the traditional economic perspective [50]. Tourism activities depend on a network spanning nature, society, and the economy, which is highly consistent with ANT. Based on ANT, Johannesson studied tourism development in the marginal areas of northern Europe and highlighted the concepts of 'translation' and 'network' in ANT, which are especially suitable for tourism research [51]. Some researchers also applied ANT to research on sustainable tourism and cultural heritage tourism [52,53]. On the whole, ANT provides researchers with a practical and fieldwork-oriented research method [54]. It describes the interest relationships between actors in practice, consistent with complex interaction analysis in research on rural space reconstruction.

Using ANT, the spatial reconstruction of Shishanxia may be regarded as the product of actor-network translation. The formation mechanisms of the actor-network in the process of 'beautiful countryside' construction and tourism development of the Shishanxia village may be explained through translation, and the dynamic mechanisms of actor-network transformation are analyzed on this basis.

## 4. Methods

This article relies mainly on qualitative research methods and actor-network analysis. The authors conducted two field visits to Shishanxia village in May and December 2019, and they interviewed human actors and investigated changes in non-human actors.

(1) Field work. In May and December 2019, the first author went to Shishanxia Village for field investigation. Based on the interview content, satellite images, and network data, spatial reconstruction of the village was located, and changes in the architectural style, distribution, and function of the village were recorded. Sketch maps of Shishanxia were then drawn.

(2) Unstructured interviews. During the fieldwork, the first author interviewed actors. To ensure that no valid information was omitted, we conducted the interview in an unstructured way. A total of 17 actors were interviewed, including villagers, relocated households, operators, government officials, and tourists. In April 2020, the first author also interviewed some other actors by telephone, Wechat, and other instant messaging tools.

The interviews lasted between ten minutes and an hour. The details of these interviews are shown in Table 1 below.

**Table 1.** Basic information of interviewees.

Interviewee	Post	Interview Time
R1	Relocated households	May 2019
R2	Relocated households	December 2019
R3	Relocated households	December 2019
V1	Villager	May 2019
V2	Villager	May 2019
V3	Villager	December 2019
V4	Villager	December 2019
T1	Tourist	May 2019
T2	Tourist	December 2019
T3	Tourist	December 2019
B1	Owner of Shishanxia Rice Cake Shop	December 2019 and April 2020
B2	Owner of Yipiandian Rice Cake Shop	December 2019
B3	Owner of Youjiantang Family Hotel	April 2020
B4	Museum's receptionist	December 2019
B5	Receptionist of Weijianshan Hotel	December 2019
O1	Secretary of the Party branch	April 2020
O2	Deputy mayor of town	December 2019

In addition, online data collection played an important role. We used satellite images from Google Earth, together with conversations with villagers, to reproduce the process of spatial reconstruction of Shishanxia village. Following data collection, the author used actor-network analysis to analyze the spatial reconstruction of the Shishanxia village.

## 5. The Case of Shishanxia

### 5.1. Case Overview

Shishanxia village is located in Nanjing City, in the center of the Yangtze River Delta region of China, at the junction of Jiangsu and Anhui provinces. There are 160 households in the village, with a registered population of 608. Shishanxia breaks the traditional pattern of rural tourism development, combining modern creativity with local characteristics, and creating a tourism village with '1980s' characteristics. As of the end of 2019, Shishanxia had opened two rustic-style hotels, three family hotels, seven agri-tainment restaurants, and more than ten other types of shops, thus bringing about a spatial reconstruction from 'beautiful countryside' to rural tourism destination. There is also the Museum of China supply and marketing cooperative and other scenic elements. A cultural and creative handicrafts market is held annually. The rural tourism industry is flourishing and has been praised by the provincial and municipal governments. In 2016, the village received more than 100,000 tourists, realizing a tourism income of nearly 10 million yuan, and the per-capita net income of villagers was 21,200 RMB yuan, an increase of 7144 RMB yuan compared to 2013 [55].

### 5.2. The Kongwu Plan

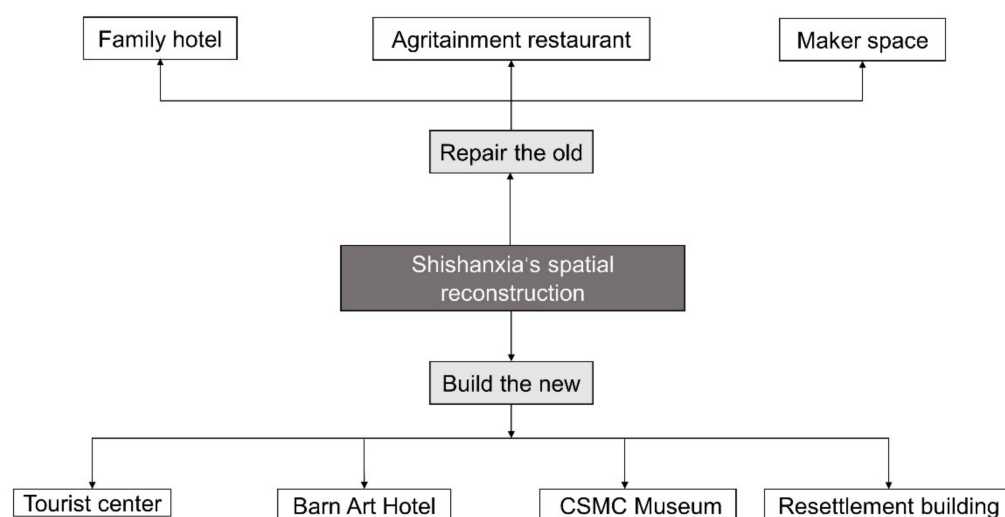
In May 2014, Lishui District proposed a program to purchase and restore vacant rural houses (the 'Kongwu Plan') and Shishanxia was chosen as a pilot, triggering the spatial reconstruction of Shishanxia.

In its Beautiful Countryside Construction action, Lishui government selected several villages with obvious population loss, high housing vacancy rates, and adjacency to the tourism ring line to carry out the Kongwu Plan, which may have been inspired by Japan's empty homes bank (空き家バンク). The government led the integration of idle land and empty houses, and they guided social capital, cultural and artistic figures, and villagers to cooperate and jointly develop rural tourism and cultural and creative industries. The government expects to activate the sleeping rural homestead (*zhaijidi*) resources and achieve

the reconstruction and rejuvenation of rural space through development model innovation, upgrading of facilities, and introduction of creative industries.

The spatial reconstruction of the Shishanxia village has mainly been carried out in two ways. One is the transformation of old buildings and spaces, such as farmhouses and maker (innovator) space. The other is the completion of new buildings and spaces, such as the museum.

As shown in Figure 1, the spatial reconstruction of Shishanxia includes the reconstruction of original space and the addition of new space, namely ‘repairing the old’ and ‘building the new’. ‘Renovation’ refers to the modernization of traditional houses in Shishanxia, based on the ‘Kongwu Plan’. On the one hand, this retains the traditional appearance of the external facade of these houses. On the other, it transforms their interior decoration into that of a modern house, which will then be transformed into a family hotel or innovator space. Also, ‘repairing the old’ includes the repair and transformation of village roads and public landscape. ‘Building the new’ refers to the construction of new buildings such as the Museum of China supply and marketing cooperative, Barn Art Hotel, tourist center, and resettlement housing, expanding the spatial boundary of Shishanxia.

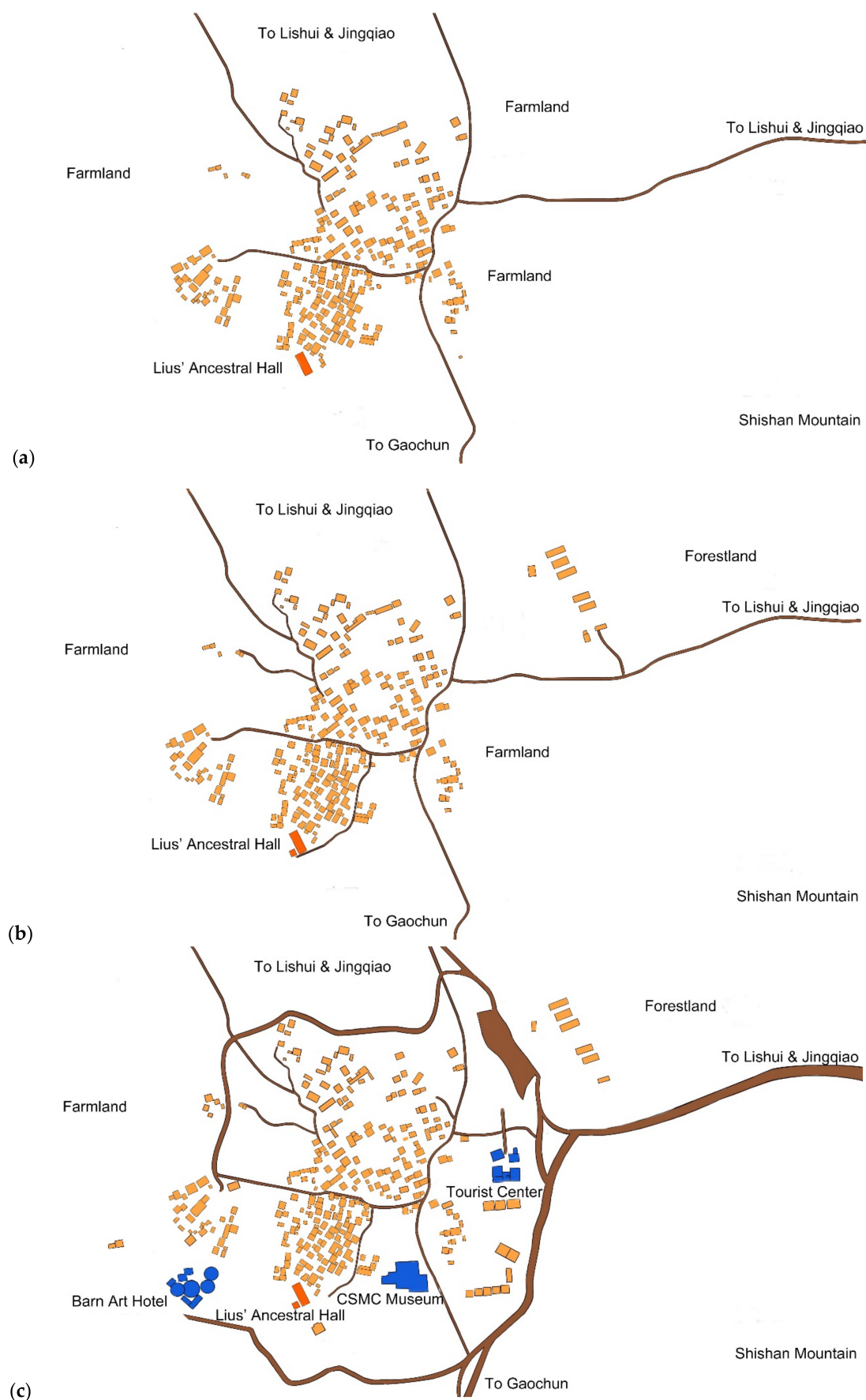


**Figure 1.** Preliminary analysis of Shishanxia space reconstruction.

In Figure 2a–c, yellow represents the existing buildings in the village, while blue represents new buildings (brown represents roads). At this time, Shishanxia’s rural space reconstruction is complete. Compared with 2014, a road network, new museum, visitor service center, residential building and the Barn Art Hotel have all been added to Shishanxia.

Since there were no business premises in the village prior to the new buildings shown in blue, the spatial sketch maps of Shishanxia in 2014, 2016, and 2018 show that the business premises in the village are concentrated in the south-central region, with almost no consumption-oriented premises in the northern area. In relation to the sustainable development of villages, this phenomenon may be regarded as a spatial imbalance.

Analysis also shows that the density, connectivity, and accessibility of the roads in Shishanxia have been significantly improved following the spatial reconstruction. The road around the village enables the northern residents to enter the road quickly, and there is no longer any need for traffic to pass through the village from east to west. The road network inside the village is restricted to pedestrians and non-motor vehicles, while motor vehicles use roads outside the village, thus separating pedestrians and vehicles. The construction of a series of new buildings and the arrival of tourists have also promoted the transfer of the spatial core of Shishanxia to tourism consumption space. With spatial reconstruction, the leading industry of Shishanxia has shifted from agricultural production to the service industry. The village has changed from being the production and living space of its original residents to the consumption space of tourists.



**Figure 2.** (a). Shishanxia, 2014; (b) Shishanxia, 2016; (c) Shishanxia, 2018.

## 6. Actor-Network Analysis of Rural Space Reconstruction

### 6.1. Composition of Actors

Based on the generalized symmetry principle of ANT, non-human entities may also be regarded as actors. Analysis of the development process of Shishanxia shows that, in the process of reconstruction from the production and living space of villagers to the consumption space of citizens, there are not only human actors (such as the Lishui District Government (LDG), Jingqiao Town Government (JTG), Shishanxia village committee, villagers, innovators, Lishui Commerce and Tourism Group, and Qingguo Culture Enterprise) but also non-human actors (such as architecture, land, location, institutions, landscape, etc.). The specific classification of actors is shown in Table 2 below.

**Table 2.** Actors in the Shishanxia spatial reconstruction process.

Type	Category	Actor
Human actors	Government	Lishui District Government Jingqiao Town Government
	Village committee	Shishanxia village committee
	Villagers	Business households, Non-business households, Households being demolished, Households not being demolished
	Innovators	Designers Wu Sirang, Shi Chunguang, etc.
	Enterprise	Lishui Commerce and Tourism Group, Qingguo Culture Enterprise
	Tourists	Tourists
Non-human actors	Resources	Land, houses
	Scenic elements Location	Ancestral hall, osmanthus tree, etc.
	Institutions	Laws and regulations

#### 6.1.1. Government

Heterogeneous actors formed an interest alliance based on their respective goals. Through their interaction, the spatial reconstruction of Shishanxia was completed. Among them, governments at all levels (including LDG and JTG) are the makers and executors of rural development policies. Relevant policies and implementation methods deeply influenced the spatial reconstruction of Shishanxia. Governments at all levels share the vision of rural development to increase farmers' incomes and to beautify the rural environment. However, there are still significant differences in specific goals between governments at different levels.

#### 6.1.2. Enterprise

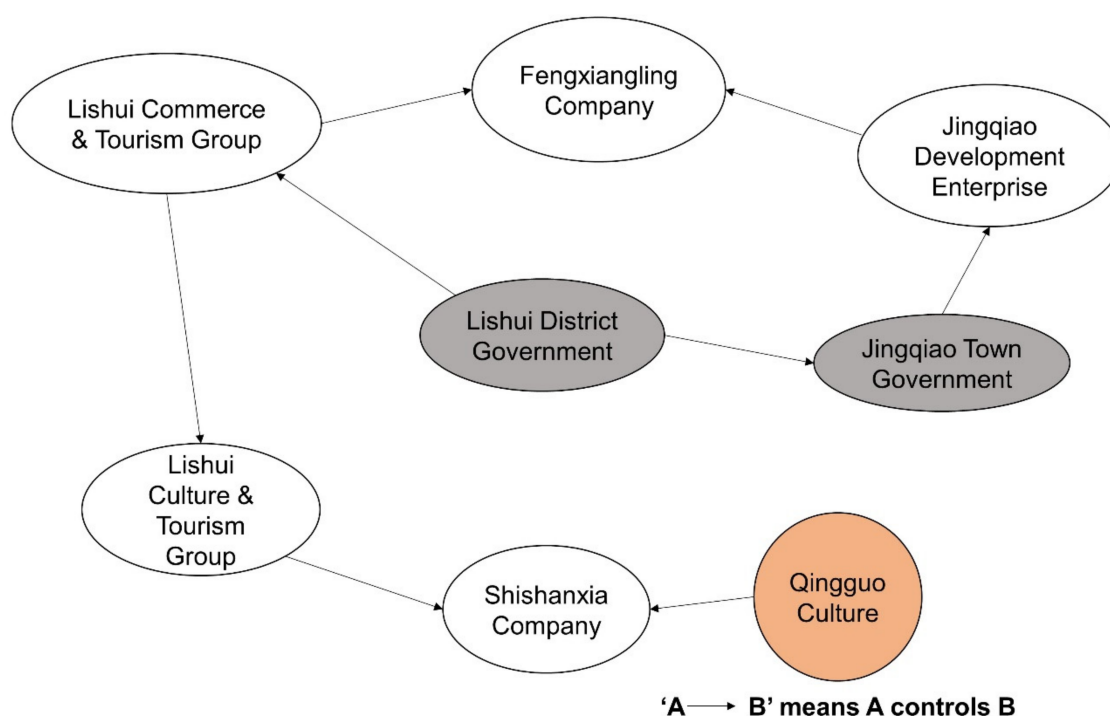
In the spatial reconstruction of Shishanxia, tourism enterprises played an essential role in providing funds and assisting the operation. Established in 2007, the Lishui Commerce and Tourism Group (Lishui Group) is an independent state-owned enterprise, invested by the LDG. In 2014, the Lishui Group and JTG jointly funded the Fengxiangling Tourism Development Company (Fengxiangling Company, Nanjing, China), responsible for the development and construction of the Fengxiangling Tourism Area in Jingqiao Town, including Shishanxia. On behalf of the Lishui Group and JTG, Fengxiangling Company provided funds to purchase 62 villagers' houses; improved the infrastructure, such as roads, water, and electricity; invested in constructing a tourist center and the Museum of China supply and marketing cooperative. Under the Kongwu Plan, the Lishui Group can purchase



villagers' houses. Villagers can choose to replace their houses and settle in the village or in Jingqiao Town. There are 41 resettlement housing units of 60, 90, and 120 square meters respectively; villagers who have already settled in the urban area can also choose not to be resettled and receive the full demolition fee (data from interview with villagers).

Nanjing Qingguo Culture Enterprise (Qingguo Culture) covers real estate, catering, hotel, and marketing planning. It owns Qingguo Coffee, Weijianshan Hotel, and other brands, and it is a diversified private enterprise. In 2015, the Lishui Group and Qingguo Culture jointly funded the establishment of the Shishanxia Tourism Development Company (Shishanxia Company), which was responsible for the renovation of the residential buildings purchased by the Lishui Group. The Shishanxia Company then used these traditional houses to create the Weijianshan Hotel.

Figure 3 shows the relationships among the enterprises participating in the spatial reconstruction of Shishanxia. Due to data limitations, it is not possible to indicate the specific equity share among the enterprises.



**Figure 3.** Diagram of investment enterprise (data from Baidu Enterprise Credit Platform) [56].

#### 6.1.3. Villagers

Villagers either actively or passively participated in Shishanxia's reconstruction. Based on the expectation that city tourists would come, some villagers transformed their houses into agri-tainment restaurants, family hotels, local specialty stores, etc. Also, some villagers chose to work on construction sites and family hotels in the village. Moreover, the 62 villagers who reached an acquisition agreement with the Lishui Group can also be regarded as passively participating in the spatial reconstruction of Shishanxia.

#### 6.1.4. Innovators

The innovator is an indispensable and vital participant in the spatial reconstruction of Shishanxia. Wu Sirang, one of the innovators and a famous designer from Taiwan, served as the general consultant on Shishanxia's construction, providing essential ideas for the spatial reconstruction of Shishanxia. Wu Sirang and other innovators also directly participated in the spatial reconstruction of Shishanxia by renting houses from villagers for creative renovation. At the time of writing, 16 innovator's projects had been completed in

Shishanxia, including Wu Sirang Mill, Shichunguang Studio, Lijing Bookstore, Thunder and Joy Printing, and Dyeing Family Hotel. The entrance of innovators enables the concept of ‘designing to the village’ and an atmosphere of community creation.

#### 6.1.5. Resources and Environment

The housing and landscape elements of Shishanxia are also essential participants in space reconstruction. Their historical significance and experience value are the driving forces of space reconstruction. Unlike human actors, they need to find their own ‘spokespeople’. Liu’s Ancestral Hall, the historically significant osmanthus tree, and other resources all reflect the cultural value of Shishanxia. They are in line with the needs of tourists and are the highlights that attract tourists to visit and consume, while the existence of vacant houses is the key to attracting the government to begin the actor-network.

#### 6.1.6. Location

Shishanxia village enjoys a superior location. It is surrounded by tourist destinations, such as Wuxiang Mountain, Shijiu Lake, and Fengxiang Mountain, and has great tourism development potential. Its location is an important factor contributing to its inclusion in the Kongwu Plan, so this is also a non-human actor in the actor-network of rural space reconstruction.

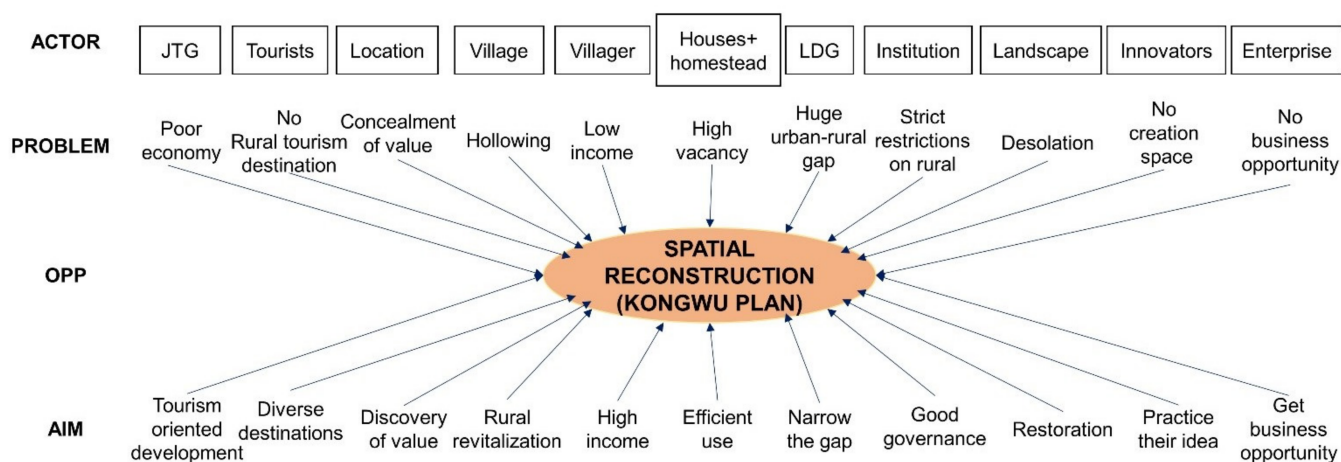
#### 6.1.7. Institutions

Institutions include laws and regulations. China’s rural land and tourism development are subject to strict legal restrictions, and Shishanxia is no exception. According to the Law of Land Administration of the People’s Republic of China, the use of rural land cannot be changed at will, and built-up areas cannot be expanded. In addition, villagers’ idle land cannot be freely traded. At this time, there is a structural mismatch in the rural land market, but the reconstruction of rural space still depends on land. The Kongwu Plan does not violate the existing legal framework. Through demolition, the scattered idle land owned by villagers can be turned into large land quota for spatial reconstruction and transformational development. The Kongwu Plan is pioneering work.

### 6.2. Translation

#### 6.2.1. Problem Presentation

Figure 4 shows the classification of actors in the space reconstruction, and their problems, goals, and obligatory passage point (OPP).



**Figure 4.** Actors and the obligatory passage point (OPP) of space reconstruction in Shishanxia.

To realize the spatial reconstruction of Shishanxia, it is necessary to clarify the objectives and interests of the various actors and then remove the obstacles through translation.

Considering the rich natural landscape resources and the location advantage of being in the tourist source area of the Nanjing metropolitan area, LDG proposed building a beautiful city. The development path of urban–rural integration is to beautify the countryside and develop the whole area’s tourism. In the current post-industrial development stage, LDG excavates the historical and cultural heritage of towns and villages and creates urban pastoral tourism destinations in the Yangtze River Delta via Beautiful Countryside Construction.

Before translation, participants have different interests and are faced with specific problems and obstacles. As a key actor, LDG faces a large gap between urban and rural areas, and rural hollowing-out. It hopes to modernize rural development through policy and financial support, narrow the gap between urban and rural areas, and improve farmers’ incomes and living standards. With rich historical, cultural, and landscape resources but a lack of funds, JTG hopes to improve the utilization of land and housing and achieve rural revitalization through unified planning and integration of various resources. The village has various resources but lacks fame. It hopes to revitalize its resources of vacant houses and historic buildings by developing tourism. Tourism enterprises seeking to make a profit faced rich landscape resources but lacked character and supporting facilities. They hope to attract tourists and obtain a return on investment by improving supporting facilities and via the characteristic transformation of Shishanxia. For innovators, Shishanxia is their creative space, and they hope to practice creatively at Shishanxia. For a long time, villagers’ living conditions in Shishanxia have been poor. They hope to have an improved environment and higher standard of living. For tourists, the problem is the lack of service facilities, and they hope to have sufficient supporting facilities for their use. Meanwhile, non-human actors, such as land, housing, and landscape resources, hope that their values can be recognized by other actors. Finally, the interests and goals of different actors converge at the OPP, namely ‘spatial reconstruction’.

#### 6.2.2. Benefit Giving

Spatial reconstruction is not only the OPP agreed upon by all actors, but also a conveyor belt of benefits in the process of Shishanxia’s transformation and development. After the spatial reconstruction, LDG can quickly achieve the goal of rural transformation and development, narrow the gap between urban and rural areas and (at the same time) profit through taxation. For JTG and the Shishanxia committee, the transformation of the existing space and the development of rural tourism can introduce urban capital, talents, and technology to the rural area, improve the income of villagers, reverse the trend of rural hollowing-out, and achieve their respective governance objectives. On the one hand, it provides a path to improve villagers’ standard of living and the living environment. On the other, it provides opportunities for traditional dwellings to demonstrate their landscape value. At the same time, governments at all levels, including LDG, steered villagers to rebuild their houses through subsidies and other policies, and they guaranteed the anticipated tourist income.

#### 6.2.3. Recruitment and Mobilization

With the active participation of the LDG, heterogeneous actors in the network have been allocated acceptable tasks through various recruitment methods. This mainly includes:

(1) Administrative recruitment. After LDG took Shishanxia as the pilot village of the Kongwu Plan, the Rural Affairs Office of Lishui District (RAOLD), the Lishui Group, and Jingqiao Town Tertiary Industry Development Office (JTTIDO) were recruited to join the actor-network and play various roles corresponding to their problems, obstacles, and goals.

(2) Recruitment by the CPC’s branches and members. To ensure that the social contradictions are resolved in the village and the rapid progress of the Kongwu Plan and various construction projects, Shishanxia has mobilized senior party members and cadres with prestige and appeal to form a Shishanxia Advisory Group to discover and mediate all kinds of neighborhood disputes in advance.

(3) Recruitment by village regulations. Based on democratic consultation, the code of conduct for villagers and the environmental convention for the village have been formulated. The public areas of the whole village have been partitioned, and rewards and punishments have been clearly defined.

(4) Recruitment of innovators. In building a ‘beautiful countryside’ in Shishanxia, the Lishui Group employed Wu Sirang as the general consultant for rural construction, as well as to build the independent innovator project, Wu Sirang’s Mill, in Shishanxia. The Lishui Group also actively promotes the linkage of innovators and houses. For example, the designer Shi Chunguang rented a villager’s two-story house, at a rent of 9000 yuan per year, and transformed it into Shi Chunguang’s Studio.

(5) Recruitment of housing and land. In 2014, Shishanxia established the Shijing Agricultural Land Stock Cooperative, which concentrated on the construction of service facilities and unified management of villagers’ land and paid annual dividends to the villagers. The hollowing-out of Shishanxia is severe. Many houses are vacant, most of them having been so for several decades, or even for hundreds of years. By 2017, the houses of 62 villagers in Shishanxia had been purchased. These villagers can choose to live in the resettlement houses at the east end of the village, or in Jingqiao Town, or choose monetary compensation.

(6) Recruitment of enterprise. The development of rural tourism requires funds, and advanced concepts and mechanisms are also needed in the later stage of operation. LDG has introduced two professional enterprises, the Lishui Group and Qingguo Culture, which leverage vast amounts of social capital with a small amount of government funds. At the same time, it has introduced a modern tourism management concept and quality management system for Shishanxia. Through linkage with professional tourism marketing organizations such as Qingguo Culture, Shishanxia’s popularity among urban residents has rapidly developed, which helps to cultivate potential consumers.

(7) Recruitment by subsidy. With funding subsidies, financing guarantees, and business skills training from local government, villagers are encouraged to use their vacant houses to set up business projects, such as a family hotel or agri-tainment restaurant. These sites provide supporting facilities for rural tourism and improve the income of villagers’ families in a long-term and stable way.

(8) Recruitment by location. The location of Shishanxia village has two characteristics. The first is a moderate distance from the tourist source, and the second is it is close to natural tourist spots. Perceived distance is an individual’s subjective perception of the actual distance between two places, which has an important influence on tourists’ destination choice behavior and satisfaction [57]. Table 3 shows time and space distance between Shishanxia Village and major cities in the Yangtze River Delta. According to Table 3, Shishanxia village is less than 200 kilometers away from most cities in the region except Shanghai, and the time distance is no more than 4 hours, for which the perception distance is ‘very close’ [58]. Besides, given the convenient high-speed railway network in the Yangtze River Delta, the space-time distance can be further compressed. Suitable distance eliminates the sense of alienation of residents in big cities and attracts them to come for short trips. Based on the above location advantages, investors judge that Shishanxia has huge tourism development potential, and they can accept the government’s call for investment.

Through mobilization and recruitment, key actors enable other actors to assume their respective roles in the actor-network. A stable network relationship has been established and realized the reconstruction of Shishanxia from the production and living space of villagers to the consumption space of tourists.

**Table 3.** Time and space distance between Shishanxia village and major cities in the Yangtze River Delta (Data from Baidu Map) [59].

City	Linear Distance/km	Time Distance (Driving)/h
Nanjing	66	1.5
Wuxi	119	2.3
Suzhou	147	2.8
Hefei	177	3
Hangzhou	178	3
Shanghai	231	3.5

In the spatial reconstruction of Shishanxia, the rural development policies of governments at all levels are an essential supporting condition. As the key actor, LDG relies on the existing rural governance network to recruit other heterogeneous actors. Among those recruited, there are human actors such as the JTG, the Rural Affairs Office of Lishui District, the Lishui Group, Shishanxia village committee, villagers, designer Wu Sirang, and other humanitarian actors—as well as non-human actors such as funds and policies provided by LDG, and the natural landscape, cultural landscape, land, and architecture of Shishanxia. Heterogeneous actors have formed complex network relations in the process of Shishanxia's spatial reconstruction.

### 6.3. Objection

The existence of dissent shows that the actor-network is not immutable; the relationship between heterogeneous actors is always in dynamic adjustment. The content of each objection will affect the form of future networks. In Shishanxia's reconstruction, objection could be divided into the following categories:

(1) Between villagers and governments. Some villagers did not want to transfer ownership of their houses; some hoped to get more direct help and quickly improve their income and living standards.

(2) Between villagers and enterprises. There is mistrust between the two.

(3) Among villagers. Some villagers became rich quickly through their own good management. This widens the income gap with other villagers and leads to a psychological imbalance with villagers who are not tourism operators.

(4) Among businesses. There are conflicts among tourism operators due to mutual competition. For example, to win tourist business, operators slander one other, which destroys the original harmonious neighborhood relationship.

(5) Between villagers and tourists. Some villagers are worried that tourists may disturb their lives, so they do not want to participate in rural tourism development.

(6) Between business and institutions. Moreover, in order to attract tourists, some operators occupy land to build parking lots without approval, which violates the land management system.

(7) Between tourists and businesses. There is distrust between consumers and operators. The consumption of tourists did not meet the expectations of operators.

(8) Between heritage and institutions. Liu's Ancestral Hall in Shishanxia is a protected municipal cultural relic in Nanjing. According to China's cultural relics law, its commercial development is strictly prohibited.

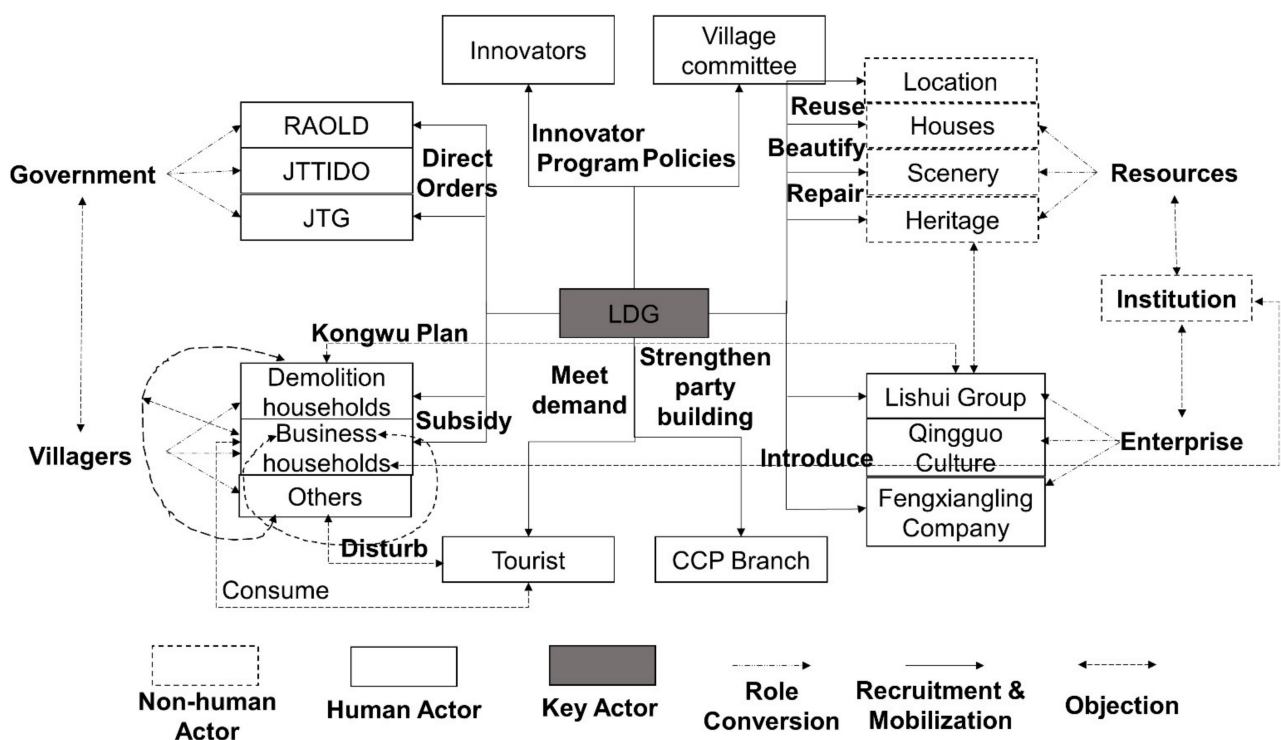
(9) Between houses and reconstruction. Some modifications have been delayed because of complex property rights. Some houses are too dilapidated to be repaired.

To solve these objections and contradictions, the village branch of the Communist Party of China (CPC) mobilized prestigious seniors, officials, and party members in the village to form a 'Shishanxia Advisory Group' to effectively mediate various neighborhood disputes, ensure that contradictions are resolved in the village, and promote the harmony and stability of the village. Sometimes the innovators will also mediate conflicts for their fame and prestige. In addition, the village committee drafted village rules based on villagers' opinions, in the form of the village environmental management system and villagers code

of conduct. Under the guidance of the government, merchants have established operator associations to oversee honest and law-abiding operation to ensure that merchants offer high-quality services. The association regularly organizes operator training to improve the independent operation ability of merchants and ensure continuous increase in income for operators. If villagers are unwilling to transfer land or houses, government officials sometimes visit villagers and make separate commitments to encourage them to participate in the Kongwu Plan. In addition, law enforcement officers will regularly patrol the village to correct illegal activity.

## 7. The Actor-Network of Spatial Reconstruction in Shishanxia

Figure 5 shows the operation mechanisms of the actor-network in Shishanxia’s spatial reconstruction.



**Figure 5.** Actor-network for Shishanxia space reconstruction.

Based on the beautiful countryside construction and tourism development process of Shishanxia, we can understand its actor-network. The solid line of the unidirectional arrow is the route of recruitment and mobilization. This starts at one actor and reaches another after being endowed with interests, which constitutes the basic framework of the actor-network. The dotted line of the two-way arrow indicates that there are objections among various actors. These objections may become problems or obstacles among actors, which will prompt actors to adjust the interest endowments and lead to changes in the actor-network in the future.

As a result of the actor-network having LDG at its core, the reconstruction process is highly dependent on heterogeneous actors' interaction. The Kongwu Plan is the ignition for the spatial reconstruction of Shishanxia, and the LDG behind it can be regarded as the key actor in the process of Shishanxia's spatial reconstruction. The key actor works first to frame the benefits of heterogeneous actors in the network, by which the participants could be aware of their problems and goals. LDG then recruited and mobilized other actors by issuing administrative orders, introducing social capital, providing entrepreneurial subsidies and potential environmental incentives, and completing the construction of Shishanxia's actor-network.



The government, a key actor, first proposed the Kongwu Plan and determined the development strategy for Shishanxia's space reconstruction. Based on the reality of Shishanxia, the innovators' divergent thinking will plan the style and pattern of Shishanxia after reconstruction. Simultaneously, some innovators were directly involved in space reconstruction activities, such as housing reconstruction, and creating new spaces, such as Wu Sirang's Mill, Shi Chunguang's Studio, and so on. Under the Kongwu Plan, enterprises could consolidate empty houses and idle land in the village. Afterwards, commercial transformation of the houses was carried out, and construction was undertaken on the idle land, which created new spaces such as the Weijianshan Hotel, Barn Art Hotel, Museum of China supply and marketing cooperatives, and others. As 'natives', villagers are not only witnesses to Shishanxia's spatial reconstruction, but also vital participants. Under the guidance of the village committee and the government, some villagers opened facilities such as agri-tainment and family hotels, which enriched the spatial diversity of Shishanxia. Despite being external, tourists still have a crucial indirect influence on Shishanxia's spatial reconstruction. Based on market research results and tourists' feedback, the government and enterprising villagers have carried out timely targeted design, transformation, and construction of the space. Finally, vacant houses and rural landscapes are the carriers of spatial reconstruction, without which no change would happen.

It is worth noting that disagreement between different actors (contradiction and conflict) is inevitable in an actor-network operation. In the beginning, some villagers did not agree to sell their houses due to objection to house value and life concept. After the entry of tourists, some villagers resisted the development of tourism due to the interference to their lives. Meanwhile, enterprises tried to minimize investment cost, and corresponding service quality decreased, which reduced tourists' willingness for secondary tourism consumption. These issues appear one after another and continue to affect the operation of actor-networks, and they even reflect the future architecture of actor-networks. Some conflicts can be solved quickly with government intervention and compromise among actors. However, some contradictions may take decades to be defused.

## 8. Discussion and Conclusions

In the context of the postmodern turn in rural geography research, and against the background of urban–rural integration development, this paper used ANT to analyze the rural space reconstruction of metropolitan suburbs under the influence of consumption culture, taking Shishanxia as an example. From the perspective of ANT, Shishanxia is not only a space for villagers to live and produce, but also a place for urban residents to consume. Through the interaction of government, villagers, consumers, capital, landscape, culture, architecture, land, and other heterogeneous actors, Shishanxia is an ever-changing complex actor-network space. With the entry of the innovator group, Shishanxia's spatial reconstruction is different from other homogenized 'beautiful villages'. Its rurality is preserved, which lays a foundation for the sustainable development of Shishanxia's tourism industry and the adjustment of the actor-network. The entry of urban capital and business culture breaks the original spatial stability of the village, and heterogeneous actors deploy funds in exchange for the dominant power of villagers in the process of rural development.

The reconstruction of rural space and rural transformation and development complement each other; rural space reconstruction is the internal mechanism of rural transformation and development. Against the background of urban–rural development integration in China, urban capital, talent, technology, and other production factors flow to rural areas. Rural composition changes, and rural areas begin to transform and develop. Correspondingly, Shishanxia has experienced three development stages, including traditional village, beautiful village, and characteristic tourist village. Before urbanization, Shishanxia was a typical agricultural and traditional village. In the period of urbanization, the environmental renovation of Shishanxia first realized its spatial reconstruction from a traditional village to a beautiful village. By developing rural tourism, Shishanxia's industrial reconstruc-

tion was brought about—followed by spatial reconstruction from a beautiful village to a characteristic tourist village.

In the current context of encouraging the development of urban clusters, this study takes Shishanxia as a typical case and finds that in the early stages of rural transformation and spatial reconstruction in the peripheral areas of the metropolis, there is still considerable external help. There is also a lack of internal development motivation in rural areas, which leads to unsustainable rural development. In the future, to achieve the sustainable development of rural areas, it will be necessary to explore ways to establish the ‘endogenous’ development mode of rural transformation and spatial reconstruction by promoting villagers’ autonomy and developing a collaborative economy.

ANT is a useful theoretical tool for analyzing the spatial reconstruction of a place. The common problem of heterogeneous actors is the starting point of space reconstruction, while interest-giving, recruitment, and mobilization explain the mechanisms of spatial reproduction. The objection refers to direction of new space reproduction. The postmodern turn in geography leads traditional spatial research to rural construction. In this context, the methodology and research perspective of ANT can become the theoretical tools of geography research and deepen geographers’ understanding of spatial phenomena in daily life.

The case of Shishanxia offers a new perspective for us to understand community development in rural China. In the actor-network of the spatial reconstruction of Shishanxia, with the government as the core actor, various subjects such as villagers, innovators, enterprises, and landscape have been mobilized. Together, they have successfully realized the spatial reconstruction and rural revitalization of Shishanxia. Among them, innovators are indispensable. They provide creativity and design to differentiate the village from others in the region, effectively avoiding the homogenizing tendencies of development. However, given the limited power and finance of local government and the scarcity of innovators, the sustainability and popularization of the Shishanxia model remain to be verified.

In the final analysis, the village is the common production and living space of villagers, and villagers are the core representation of the village’s rurality. Public participation is essential for successful community reconstruction. In the process of space reconstruction, villagers’ rights to know, participate, express, and supervise must be guaranteed. Through public participation, the will of villagers will be valued, their sense of being protagonists will be stimulated, and their initiative and enthusiasm are likely to be mobilized to create a new and different village. In this way, the reconstruction of village space will no longer be the sole responsibility of the government as the key actor. To realize the sustainable development of villages, it is necessary to establish an effective grassroots organization that can reflect the will of local people and that has the right to formulate village development strategies. It will become a new key actor and promote the formation and operation of a new actor-network.

ANT has well explained the operation mechanism of the Kongwu Plan. Its core is to break existing barriers between urban and rural areas in China and promote the flow of capital, consumption, and talents from cities to rural areas. Given China’s aging population, the Kongwu Plan has great potential. In the future, rural idle houses can be activated not only by innovators and tourists, but also by urban elderly people.

**Notes:** Figure 2a–c need to be printed in color.

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