

Article

A Community Livelihood Approach to Agricultural Heritage System Conservation and Tourism Development: Xuanhua Grape Garden Urban Agricultural Heritage Site, Hebei Province of China

Mingming Su ¹, Yehong Sun ^{2,*}, Qingwen Min ^{3,4} and Wenjun Jiao ³

¹ School of Environment and Natural Resources, Renmin University of China, Beijing 100872, China; smm52@hotmail.com

² Tourism College of Beijing Union University, Beijing 100101, China

³ Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101, China; minqw@igsnr.ac.cn (Q.M.); jiaowj@igsnr.ac.cn (W.J.)

⁴ University of Chinese Academy of Sciences, Beijing 100049, China

* Correspondence: sunyehong@buu.edu.cn; Tel.: +86-135-8192-9113

Received: 19 December 2017; Accepted: 26 January 2018; Published: 31 January 2018

Abstract: The designation, conservation and tourism development of agricultural heritage systems, which are embedded with intricate human–nature relations, could significantly influence community livelihoods. Therefore, a livelihood approach is critical for agricultural heritage conservation and the sustainability of the hosting community. Taking Guanhou Village, Xuanhua Grape Garden Urban Agricultural Heritage Site as an example, this study examines impacts of heritage conservation and tourism on the community livelihood system and its implications for community livelihood sustainability. A sustainable livelihood framework is adopted to guide the analysis. Face-to-face in-depth interviews were conducted with management officials, village leaders and village residents. The research identified the importance of Globally Important Agricultural Heritage Systems (GIAHS) designation on raising government support and public awareness on conservation. Tourism emerges as an alternative livelihood to some residents which exerts positive economic influence. However, tourism participation is currently at a low level which restricted the distribution of benefits. The sustainability of local rural livelihood is at risk due to the rapid urbanization, the decline of human resources and the insufficient integration of traditional agriculture with tourism. Practical implications were discussed to enhance local participation and tourism contribution to GIAHS conservation.

Keywords: agricultural heritage system; GIAHS; tourism; rural community; sustainable livelihood

1. Introduction

An agricultural heritage system is a living, evolving system of human communities in an intricate relationship heavily embedded within its natural, social and cultural environment [1]. With exceptional ecological, social, cultural, scientific and demonstration value, these systems have been sustained for centuries and shaped human history, cultural and society [2,3]. Therefore, the Globally Important Agricultural Heritage Systems (GIAHS) was established by the Food and Agriculture Organization (FAO) of the United Nations, aiming to conserve these systems with relevant landscapes, biodiversity, and traditional knowledge for sustainable management [1]. This call has been actively supported worldwide, which encourages the recognition, conservation and sustainable development of these important agricultural systems.

Previous studies have demonstrated that the GIAHS designation could promote the value identification and conservation of an agricultural system [3–5]. Moreover, rural tourism based on

the value of agricultural systems and supported by the hosting community has been considered as an effective development initiative for many GIAHS sites [6–9]. Tourism has demonstrated its ability to generate positive effects on the dynamic conservation of agricultural systems and the sustainable development of the hosting community through raising public awareness, increasing the economic value of agricultural products, enriching community livelihoods, and promoting economic development of the area [3,10–13]. For example, various studies on the traditional rice–fish system at Qingtian in Zhejiang province of China demonstrated the impacts of tourism on increasing the price of agricultural products and enhancing the recognition of the value of traditional agricultural systems; hence, conservation of the traditional rice–fish system is further promoted [3,6,10].

As practitioners of agriculture, the hosting community is a critical player in the conservation of agricultural systems, which depends on human labor, local knowledge and the ingenuity of local farmers [3]. Moreover, possessing rich knowledge of the local environment, culture and traditions, the hosting community is often equipped with the experience and ability to address local meanings and issues [14–16]. These are critical elements to ensure tourism development is well-informed and locally oriented [14,15]. Therefore, the sustainable development of the hosting community is critical to the sustainability of these important agricultural systems.

Long considered an effective catalyst of rural development and revitalization, tourism has been widely promoted and relied upon as a means of addressing the social and economic challenges facing peripheral rural areas, primarily those associated with the decline of traditional agriculture [17]. However, there are also cases where the establishment of tourism areas and associated developments undermine traditional agricultural systems, disrupt rural livelihood systems, socio-political processes and organizations [18,19]. The increasing dependence on tourism may also pose threats on the sustainability of traditional agriculture and rural livelihoods. Therefore, impacts of tourism on the preservation of agricultural systems and the hosting communities should be critically assessed and the community livelihood sustainability should be emphasized.

Taking a holistic perspective of people's lives [20], the Sustainable Livelihood Framework (SLF) emphasizes the involvement of people in development [21] and integrates notions of wellbeing, security and capability, vulnerability and resilience, and natural resource sustainability [22]. It has proven to be a useful tool for assessing impacts of development initiatives and identifying potential strategies to improve livelihood sustainability [20,23].

Therefore, this study adopts the sustainable livelihood framework to critically assess tourism impacts on the livelihood sustainability of rural communities with a case study of Guanhou Village, Xuanhua Grape Garden Urban Agricultural Heritage Site of Hebei Province of China. With over an 1800-year history of culture and cultivation, The Xuanhua traditional grape garden system was designated by FAO as a GIAHS in 2013 and the only urban agricultural system worldwide. As a typical example of traditional Chinese garden agriculture, the traditional cultivation of milk grapes (botanical name: *Vitis Vinifera* cv. Milk) with funnel-shaped trellises, which could provide more sunlight to the plants, has unique ecological features. Milk grapes are good to eat fresh and were traditionally used to make wine with a strong local flavor. In addition, this traditional way of cultivation is embedded with local social and cultural traditions and can service as a unique tourism attraction and generate opportunities for a variety of tourism initiatives. For example, the grape banquet was first developed during the Ming Dynasty, including more than 20 dishes cooked with milk grapes, which are still served by several restaurants in Xuanhua as part of a unique local tradition. However, this precious traditional courtyard-style grape garden and its culture are being endangered by encroaching fast urbanization in recent decades, which calls for an urgent need for its protection and sustainable development.

2. Study Area

2.1. Xuanhua Grape Garden of Zhangjiakou City, Hebei Province

With over an 1800-year history of cultivation and distinctive ecological and cultural value, Xuanhua traditional grape garden was designated by FAO as GIAHS in 2013 as the only urban agricultural system worldwide. As illustrated in Figure 1, located in Xuanhua District of Zhangjiakou City, the Xuanhua traditional grape garden enjoys high potential of development with the close proximity to Beijing, the capital of China.

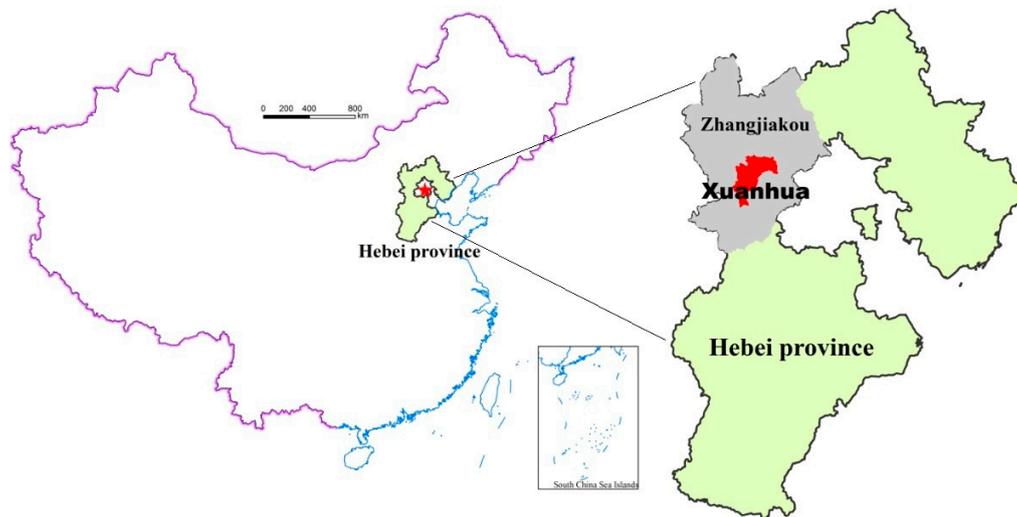


Figure 1. Location of Xuanhua District, Zhangjiakou City, Hebei Province.

Cultivated in the yard of traditional rural houses, the Xuanhua traditional grape garden is a typical example of Chinese garden agriculture. The use of traditional funnel frames has high ecological value to ensure biological diversity and food safety, which also creates a unique agricultural landscape with high aesthetic value (Figure 2).



Figure 2. The traditional cultivation of milk grapes (**right**) with funnel-shaped designed trellises (**left**) at Guanhou Village (photos provided by Xuanhua Grape Institute).

Moreover, strongly linked to the local culture and rural lifestyle, the Xuanhua milk grape and the funnel-framed traditional grape cultivation are part of the local identity and pride of Xuanhua residents. A variety of local customs, folk art, handicrafts, cuisine, social and family relations, and collective memory are closely associated with the traditional grape cultivation. In recent decades, the unique

landscape of the funnel-framed grape yard also serves as a unique tourism attraction and generates opportunities for a variety of tourism initiatives in Xuanhua District.

Different from other agricultural heritage sites, the Xuanhua traditional grape garden was historically initiated in the urban environment within and around Xuanhua Ancient City and has been under special threat with the fast urbanization in recent decades. Previously widely dispersed in Xuanhua District, the current traditional grape gardens are mainly distributed in Guanhou Village, Penyao Village, Dabei Village, and Chenjiazhuang Village, which calls for an urgent need for heritage conservation and sustainable development.

2.2. Guanhou Village, Xuanhua District

Guanhou Village is administered through Chunguang County of Xuanhua District. Conveniently located besides the Xuanhua Ancient City Wall, Guanhou Village has well preserved traditional grape cultivation practices and courtyard style grape gardens, forming an oasis with attractive agricultural landscape in the midst of an urban-industrial environment. As shown in Table 1, Guanhou Village has limited agricultural land and grape cultivation is currently the most important agricultural practices, with 95.3% of agricultural land devoted to grape cultivation, among which 85.9% of grape cultivation is through traditional methods involving 207 households (40.7%). Most families have practiced traditional milk grape cultivation for generations (Figure 3) with grape vines over 100 years old well preserved in the village. In addition to milk grape, there are more than 40 other grape varieties, 50 other types of vegetable and fruits, over 40 types of flowers grown in the courtyard. The traditional courtyard agriculture with other plants surrounding the grape frames functions as a food supply for families as well as creating a livable living environment for residents.

Table 1. Guanhou Village of Xuanhua District.

Total Population	No. of Household	Total Agricultural Land (Mu)	Grape Cultivation Land (Mu)	Traditional Grape Cultivation Land (Mu)	No. of Traditional Grape Frames
1342	501	320	305.6	262.6	787

Note: 15 Mu = 1 Hectare.



Figure 3. Traditional agricultural practices conducted by local residents of Guanhou Village (photo taken by authors).

Due to its well-preserved traditional grape cultivation and its convenient location, Guanhou Village has become the core area for GIAHS conservation and tourism development. In recent years, Guanhou Village was chosen as the site to host the Xuanhua Grape Cultural Festival, which is one of the key festivals of Xuanhua District and attracts many tourists. Four Nongjiale rural family hotels have been developed in the village and a Grape Culture Museum has recently been established at the entrance of the village. In 2016, about one million tourists visited Xuanhua District and Guanhou Village received about 30,000 tourists, mainly during the grape harvest season in September and early October.

3. Materials and Methods

3.1. The Sustainable Livelihood Framework (SLF)

Pioneered in the broad context of rural development, the sustainable livelihood concept has since been applied in a diversity of situations in both developed and developing countries [23–26]. A livelihood comprises the capabilities, assets and activities required for making a living [24,27]. Assets are usually categorized into natural, physical, economic or financial, social and cultural capital, and the access to these assets is mediated by institutions, organizational structures and social relations [24]. Livelihoods can be defined at different hierarchical levels, from individual and household to community [27]. The sustainability of a livelihood is assessed according to its ability to cope with and recover from stresses or shocks, maintain or enhance capabilities and assets, and provide livelihood opportunities for succeeding generations [21,27].

Initiated by UK's Department for International Development (DFID), the Sustainable Livelihoods Framework (SLF) is a widely used framework to analyze community livelihoods. Figure 4 structures the SLF, which is composed of five key components: contexts, livelihood resources, transforming structures and processes, livelihood strategies, and livelihood outcomes. A diversity of macro conditions and social trends constitute the broad context for people's livelihoods. Livelihood resources are inputs to a livelihood system and are used to generate livelihood outcomes [23,28]. Transforming organizations and structures influence whether and how a diversity of livelihood resources is accessed and transformed into livelihood strategies. A variety of livelihood strategies are then constructed. Different outcomes may be achieved in the form of wellbeing, income, empowerment, health and vulnerability [24,27,29]. Both resource/environmental and socio-cultural sustainability are emphasized as sustainable livelihood outcomes [21,27]. A livelihood can be called sustainable if it has positive effects on local and global natural and cultural resources and is able to cope with stress and changes and continue to improve [27]. The process is not linear, since livelihood outcomes can influence the macro context and conditions and shape the livelihood resources and access to them.

Taking a holistic perspective of people's lives [20], the SLF acknowledges the multi-sectoral character of real life, particularly common in rural communities [20,23,27]. Bringing together the notions of wellbeing, security and capability, vulnerability and resilience, and natural resource sustainability [22], the SLF has proven to be a useful aid in the assessment of the impacts of development initiatives with an emphasis on local lives and perspectives [20]. It can be used to analyze the complex livelihoods of a community [27] and to identify potential strategies to make livelihoods more productive and sustainable [20,23,30]. It permits the merging of different approaches to understand how varied factors, such as land tenure [31] and different types of organization [32], can shape the livelihoods of rural communities.

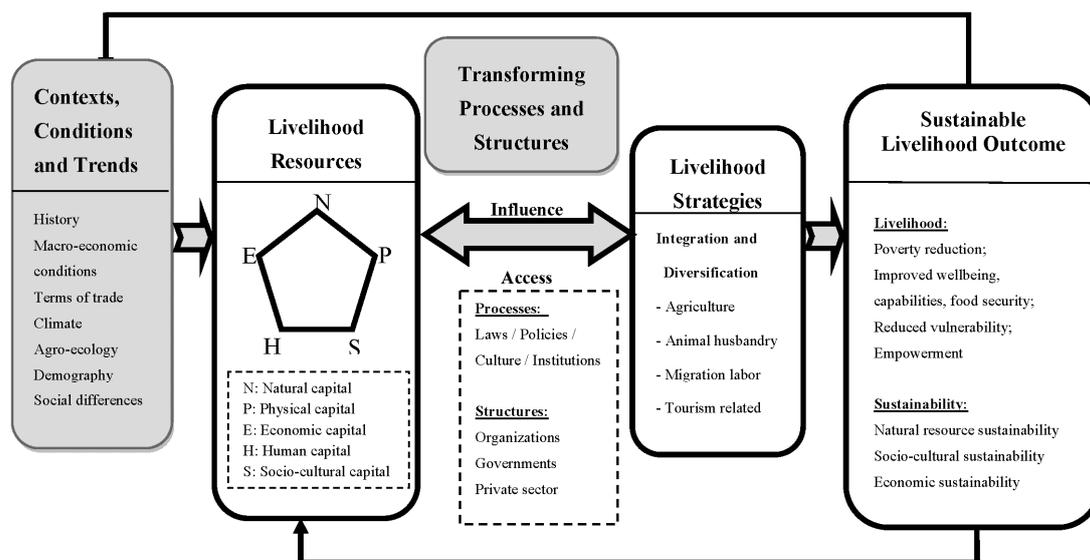


Figure 4. Sustainable Livelihood Framework (developed based on Scoones, 1998 [23] and Tao and Wall, 2011 [32]).

The community is a key stakeholder in tourism development, whose livelihoods are inevitably impacted by tourism [19]. Recent applications of SLF in tourism also support its suitability to evaluate tourism impacts from a community perspective and to identify suitable strategies to enhance community engagement and improve community livelihood sustainability, particularly in a rural context [19,33,34]. Being a people-centered concept, the SL approach emphasizes the community involvement in development [21] and their freedom, albeit with constraints, of livelihood choices [25]. Previous research argued that tourism should not be the only livelihood option for communities and that alternative choices should be available if tourism-related livelihood strategies and lifestyles do not match needs and preferences [19,21,25].

Therefore, with a focus on community, this study applies the SLF to critically assess impacts of agricultural system conservation and tourism on the rural livelihood system at Guanhou Village, the most typical example of the Xuanhua traditional grape garden.

3.2. Data Collection and Processing

Interviews have been widely adopted in livelihood research on tourism and communities [19,31–35] where an understanding of organizational structures, policy initiatives and their various outcomes is sought. Therefore, face-to-face semi-structured interviews were selected as the major data collection methods during five field investigations from September 2016 to September 2017. The list of interviews is shown in Table 2, whereas names and exact position title of interviewees were not disclosed to ensure privacy.

Table 2. List of interviewees.

Type	Interviewees
Officials of Local Government	1 from Xuanhua District Government 1 from Chunguang County 3 from Zhangjiakou Xuanhua Grape Institute
Guanhou Village	2 from Guanhou Village Committee 24 households

Management perspectives were obtained through interviews with key government officials of related departments of Xuanhua District Government, Chuanguang County and Zhangjiakou Xuanhua Grape Institute, which is currently the key government organization responsible for the use and conservation of the Xuanhua grape garden GIAHS. These interviews aim to understand the status of agricultural heritage conservation, tourism planning and development, and community participation in tourism. In addition, Guanhou Village Committee interviews were to reveal the village perspective on the status of tourism development and community participation, the livelihood changes, attitudes towards these changes, issues and concerns at the village level, and aspirations for the future.

Resident perspectives were approached through house interviews at Guanhou Village. Respondents were acquired using the snowball technique, and the first group of respondents were recommended by the village committee. The next round of respondents was recommended by the previous round of respondents. The interview process stopped when no new information could be obtained. Interviews were conducted in the house of residents as per their availability through a dialogue format to ensure their understanding of interview questions and the richness of information obtained. Resident interviews were guided by thematic questions including their socio-economic characteristics, current livelihood portfolios, changes to livelihood activities induced by GIAHS conservation and tourism development, attitudes toward tourism and agricultural heritage conservation, issues and concerns, and aspirations for the future. Probing questions were added as needed. Finally, a total of 24 household interviews were conducted. Each interview lasted from 30 min to 2 h.

Observations were conducted during field investigations to understand the level of GIAHS conservation and tourism development, ways of resident participation in tourism and their engagement in other livelihood methods. Field notes were taken to document what was observed and experienced. Secondary data were collected from Xuanhua District Government and Xuanhua Grape Institute, mainly including Xuanhua District Government reports, The 13th Five Year Plan of Xuanhua District, the 2013 Xuanhua Grape Garden Agricultural Heritage Conservation and Development Master Plan, and the 2016 Agricultural Heritage Conservation Report.

All interviews were conducted in Chinese. Interviews were firstly transcribed in Chinese and thoroughly reviewed. Major themes were then identified and categorized according to the elements of the Sustainable Livelihood Framework. Results from different data sources were compared and cross-checked with the contents of the collected documents and researchers' field notes.

4. Results

4.1. Status of GIAHS Conservation and Tourism Development at Guanhou Village

GIAHS designation of Xuanhua Grape Garden represents the highest level of international recognition of its value, which generates a variety of government support for its conservation and tourism development, ranging from policy making to financial assistance. Xuanhua Urban Grape Garden Conservation Committee was established by the District Government to ensure the implementation of "Xuanhua Urban Grape Garden Preservation and Management Regulation" with annual monitoring of key indicators by Xuanhua Grape Institute. As required in the application for GIAHS designation, a Heritage Conservation and Development Master Plan is in place since 2013, which outlines the area of protection and detailed measures to facilitate dynamic conservation of Xuanhua grape gardens. In 2016, the plan was revisited to reflect changes and challenges since designation.

Tourism development increases the visibility of the Xuanhua grape garden, which contributes to the increased recognition of its value and public support for its conservation. Research indicates 100% recognition of GIAHS designation among 24 interviewed households at Guanhou Village and most of them expressed their pride of Xuanhua traditional milk grape cultivation. However, current tourism development is largely on sightseeing tours during the harvesting time in September and early

October with very few activities in the village. As a result, tourism expenditure is only about 50 RMB per visitor, mainly on purchasing grapes. Economic benefits to residents are at a minimum level.

Officials of the local government, at the district, county and village level, all expressed their pride in the GIAHS designation of Xuanhua Grape Garden as the highest level of recognition of its unique value. They also expressed their intention for conservation. However, they are urgently in need of development opportunities to increase local income under the pressure of rapid urbanization. Tourism is considered by the local government as a way to balance development and conservation. An official from Xuanhua District Government commented:

Xuanhua has the only funnel-shaped grape cultivation system in China and all over the world. We could not let it disappear in our hands. However, with the increasing land price and opportunities in cities, we need to find a way to let the residents get enough economic benefits to sustain the system. Otherwise, no young people would like to return to the village and participate in grape cultivation practice. We should not only sell grapes, we should do more with this unique resource.

Resident opinions on the heritage conservation are varied; with 75% interviewed residents questioning the meaning of conservation due to the instability of grape sales and the potential high compensation from property development. In addition, as indicated in interviews, current grape cultivation is usually undertaken by residents aged 50 years and older. The majority of young residents were migrant laborers working outside the village with no experience in traditional grape cultivation. Even though 79.2% interviewed residents expressed their willingness to continue traditional grape cultivation, 54.2% interviewed residents are reluctant to let their children to continue with grape cultivation. This situation illustrates the challenge facing the inheritance of traditional grape cultivation in Guanhou Village, which are also expressed by the village committee and some elder residents.

4.2. Livelihood Analysis of Rural Residents at Guanhou Village

Major livelihoods methods of rural residents at Guanhou Village include grape cultivation and migration working, with a high dependence on grape cultivation. As indicated in Table 3, all interviewed households were involved in grape cultivation and 58.3% interviewed households rely solely on grape cultivation. Migration working also contributes a significant portion of household income to involved households. Tourism participation in Guanhou Village is still low with only 4 Nongjiale rural family hotel operators. As grape sales from tourists are included in income from grape cultivation, the tourism contribution, only including catering and accommodation services, to household income is not high.

Table 3. Typology of Livelihood Portfolio of Guanhou Village residents.

Typology of Livelihood Portfolio	No. of Households	Average Annual Income from Each Livelihood (RMB)
Grape cultivation	14	16,400
Grape cultivation + migrant labor	6	9066 15,584
Grape cultivation + Tourism (excluding grape sales)	2	51,000 16,500
Grape cultivation + Others (low income subsistence, rental of houses)	2	1188 4212

However, tourism usually requires a high level of investment both in financial and human resources. As indicated in resident interviews, particularly for Nongjiale operators, house renovation, purchase of daily necessities and home appliances and facilities require a large amount of investment. An interviewee who did not run a Nongjiale commented:

Opening a Nongjiale is not easy. You have to have at least several thousands (RMB) for renovation. You also need to buy some furniture. We do not have much money. Moreover, we do not have an extra room for tourists.

Serving tourists is also highly labor intensive and requires a variety of skills, such as cooking and guest service. It is particularly so as most residents involved in grape cultivation are elders aged over 50 years. An elder interviewee commented: "There are only two of us in the family now. Both of us are more than 60 years. We are fully occupied with planting grapes; we do not have energy to serve tourists".

Tourism participants are found to be those already with higher level of livelihood resources, such as income from grape cultivation, area of agricultural land, and available human resources. Tourism participation generated extra household income for tourism participants and enlarges the income gap between tourism participants and other residents.

Table 4. Willingness to tourism participation of Guanhou Village residents.

	Willingness to Open Courtyard for Tourists to Visit	Willingness to Operate Nongjiale Rural Family Hotel
Yes	75.0%	25.0%
Not sure	9.3%	4.2%
No	16.7%	70.8%

To address the current low participation in tourism, the general attitude toward tourism is acquired and majority of respondents (87.5%) stated their support for tourism and hope tourism could further increase their grape sales. However, some residents expressed their disappointment with current tourism without much contribution to their grape sales. Respondents' willingness to participate in tourism, in terms of the current two major types of participation, is examined as illustrated in Table 3. Seventy-five percent of respondents would like to open their courtyard for tourists to visit, which is perceived to be able to increase grape sales. Major obstacles are identified to be associated with bad behaviors of tourists, who might damage grape vines. However, only 25% of respondents are willing to operate a Nongjiale rural family hotel (Table 4), providing catering and accommodation for tourists. Major obstacles recognized by respondents for Nongjiale operation include shortage of residential spaces (33.3%), high investment (12.5%), limited tourists (12.5%) and insufficient human resources (8.3%).

4.3. Evaluation of Livelihood Sustainability

The livelihood system is re-evaluated based on the specific situation of Guanhou Village, with special consideration of GIAHS designation, tourism development and the process of rapid urbanization, all of which are recognized as key momentum for the development of the village. Figure 5 outlines the livelihood system dynamics in response to the above momentum.

First, GIAHS designation and tourism development contributed to a more favorable macro condition for heritage conservation through a higher level of government support, resident and public awareness and the higher potential for tourism development based on the increasing recognized value of traditional grape cultivation. However, GIAHS conservation at Guanhou Village is under severe pressure from the increase of land value due to property development and rapid urbanization, which could lead to short term economic benefits to village residents at the expense of GIAHS. It complicates the macro contexts of the livelihood system.

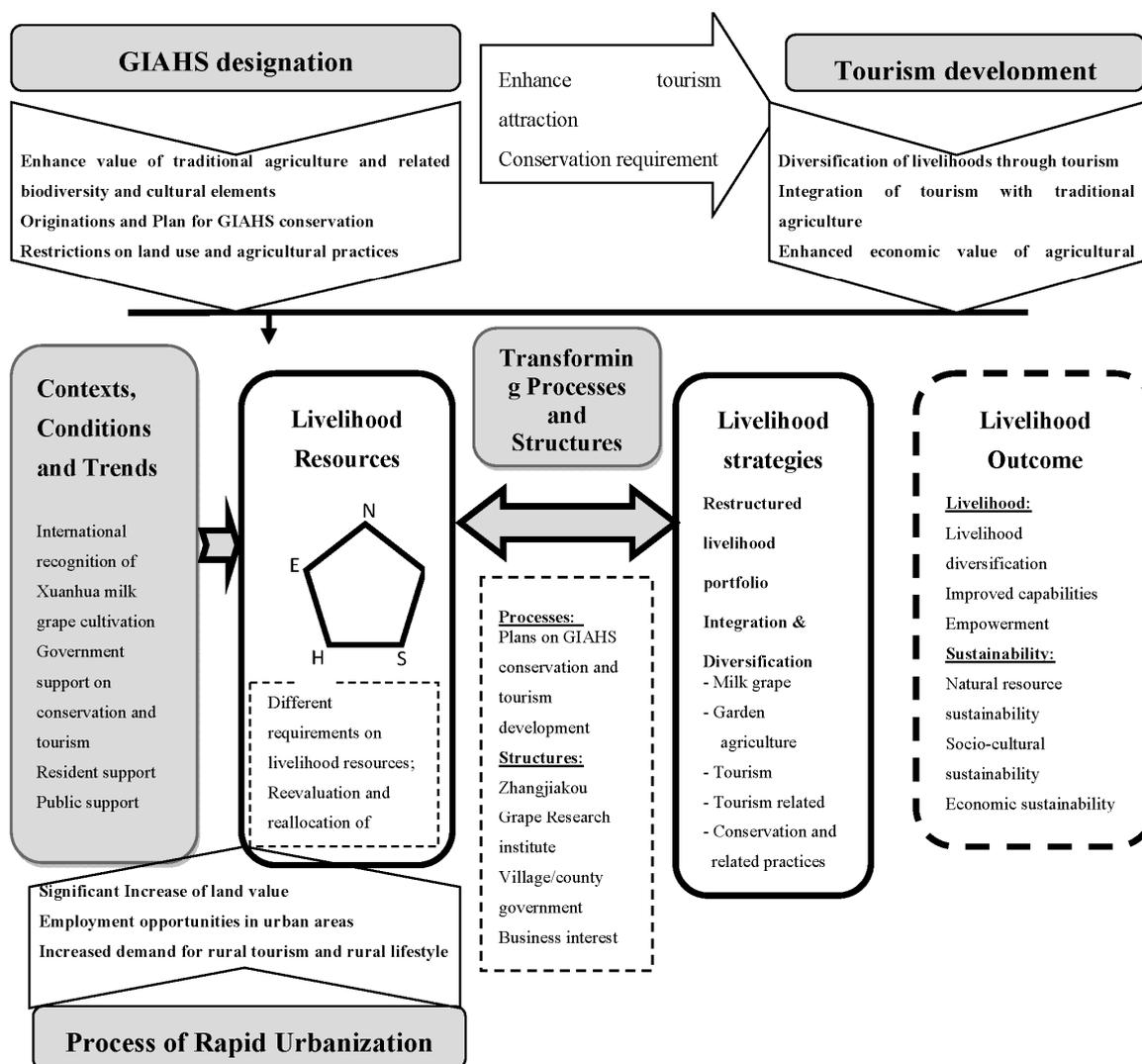


Figure 5. Impacts of Globally Important Agricultural Heritage System(GIAHS) designation and tourism development on the community livelihood system at Guanhou Village.

The level of physical and natural capital is generally low, with an average agricultural land per household of 0.7 Mu. The traditional grape cultivation is generally practiced by elder residents who inherited related local knowledge from ancestors. There is a lack of knowledge and skills to provide tourism services and managing tourist flows. The average annual household income was less than 10,000 RMB in 2016. Therefore, human capital and economic capital are both at a low level. With GIAHS designation and the booming tourism interest, the value of the traditional milk grape cultivation practices and associated social and cultural elements increases, leading to a higher potential for associated livelihood development as represented by tourism.

GIAHS designation triggers the formation of conservation organizations and the conservation function of existing governance organizations, such as the village committee, the county government and Xuanhua Grape Institute. More actors are involved in recognizing and conserving the traditional agricultural system, and associated tourism development. The latter aroused business interests from potential investors. As required by the GIAHS designation and the development initiations, the conservation and management plan was in place and revisited in 2016. These factors act as major transforming process to facilitate the evolvement of the livelihood system, strengthening the importance of the traditional agriculture system and livelihood strategies that could support the conservation of the agriculture system (Figure 5).

The research identified that the community still has heavy reliance on grape cultivation as their major livelihood strategy. Conservation and related practices, local tradition and culture are not yet incorporated as community livelihood strategies. Tourism emerges as an alternative livelihood for some residents to be integrated in their household livelihood portfolio. Tourist visits to traditional grape gardens during the harvest season have increased grape sales, enhanced the visibility and brand awareness of Xuanhua traditional milk grapes. Extra income is generated to some residents through providing catering and accommodation services to tourists. However, tourism is still at the early stage of development without a comprehensive plan and a proper organizational arrangement, leading to a low economic contribution from tourists to village residents. Due to restrictions on financial and human resources, the majority of village residents is not capable and is reluctant to engage in tourism. The low level of community participation is examined. Current tourism benefits are far from enough to promote grape price and sales at the community level and not evenly distributed among residents, leading to an increased income gap within the community.

The GIAHS designation and tourism development have recognized contribution to GIAHS conservation, rural livelihood diversification, the raising recognition of heritage value, and the enhanced community capacity in grape cultivation and tourism services. The current livelihood sustainability is at risk, with the declining human resources engaged in the traditional grape cultivation due to the aging of the engaged population and the migration of the younger generation. The current integration of tourism and the traditional agriculture system is insufficient to generate enough economic benefits to be comparable with the rising land value caused by urbanization. The local knowledge of traditional milk grape cultivation is at risk due to the difficulty to passing it on to younger generations who mostly reside outside the village with no experience in agriculture and low interest in returning to the village. Moreover, new knowledge and skill sets are needed for the community to be prepared for alternative livelihoods associated with tourism.

Therefore, there is an urgent call for momentum to enhance the sustainability of the livelihood system through facilitating the development of new livelihoods that are in line with the conservation requirements and development needs of the community, particularly amongst the younger generation.

5. Discussion and Conclusions

Representing intricate human–nature relations, agricultural heritage systems are closely embedded within the natural and cultural environment and associated with the livelihoods of the hosting community. The designation, conservation and tourism development of these systems could influence how communities develop their livelihood portfolio. Therefore, a livelihood approach is critical for the long-term development of agricultural heritage sites and the sustainability of the hosting community. The revised SL framework is used in this study to analyze community livelihood sustainability at Guanhou Village, a GIAHS site.

As the highest level of international recognition, GIAHS designation contributes to the conservation of Xuanhua Grape Garden through strengthening government support and enhancing local and public awareness. However, in the context of the rapid urbanization, Guanhou Village, located at the urban fringe, experiences constant negotiation between conservation and development. The GIAHS designation, with its needs for conservation, also has restrictions for short-term development, leading to the struggle of Guanhou Village residents.

The conservation of the traditional milk grape cultivation is closely associated with the livelihood of the community, which could not be sustained solely through government conservation policy and support. Applying a tourism use on the values of traditional milk grape cultivation practices, tourism has the potential to generate higher economic benefits from traditional agriculture, retain young residents, and support GIAHS conservation through raising preservation funds and public awareness support.

Located directly to the north of Beijing, the capital of China, Zhangjiakou City, where Xuanhua District resides, has long been considered as an ecological garden of Beijing. With the coming 2022

winter Olympics jointly held by Zhangjiakou and Beijing and the construction of a high-speed railway between Beijing and Zhangjiakou with a stop at Xuanhua District, the connection between the two cities will be further promoted. These factors would enhance tourism development potential through enhanced transportation accessibility and higher recognition of tourism resources in Zhangjiakou, including the Xuanhua traditional grape garden.

Therefore, there is an urgent need to develop a proper tourism plan outlining a series of activities for interpreting and showcasing the value of the traditional milk grape cultivation and the local culture and lifestyle associated with it. Interactive and participatory tourism programs should be incorporated in the tourism plan. These programs should engage not only agricultural elements but also local traditions, customs and artifacts. Thus, the traditional milk grape cultivation and its historical and cultural backgrounds would be better presented and promoted. Such programs could enrich tourist experiences and deepen their understanding of the value of the Xuanhua grape garden. Such programs could also engage a wider community to participate, acquire higher economic benefits and ensure wider distribution of benefits. Local government and the village committee should take the initiative to collaborate with the tourism planner and residents to facilitate such development.

Furthermore, due to the important role of community in GIAHS conservation and tourism, the management model should be further explored with innovative measures to draw livelihood resources from village residents, enlarge community participation and share benefits within the wider community, particularly those with a low level of livelihood resources. Training and capacity building activities should be organized to equip the community with the knowledge and skills that are needed in GIAHS conservation, tourism and associated livelihoods.

Moreover, along with further development of tourism, a conservation fund can be established drawing from tourism income to directly support GIAHS conservation and community practices of traditional grape cultivation in addition to government support. This practice could alleviate the financial pressure on conservation, which currently depends on government support, and enhance community participation.

Linking natural systems with human systems, the sustainability of agricultural systems is inevitably related to the sustainability of the hosting community. With the case study of Xuanhua Grape Garden, this study examines interactions between GIAHS conservation, tourism development and community livelihood. Research demonstrated that tourism, if properly planned and managed, has the potential to support GIAHS conservation and enhance community livelihood sustainability. Importantly, creative measures should be developed to integrate both ecological value and cultural value of agricultural systems with tourism to facilitate extensive community participation and equitable benefit sharing so as to achieve the goal of sustainability at GIAHS sites.

Moreover, the revised SLF has proven to be a suitable and useful framework to understand critically the complication and dynamics of the rural livelihoods, assess impacts of GIAHS conservation and tourism development on community sustainability, and identify implications for sustainability. The framework can be applied in other GIAHS sites to understand interactions between community, conservation and tourism and identify strategies to achieve sustainability.

The study adopted a resident in-depth interview as the major data collection method to understand resident attitude and livelihood status, which obtained rich information from each participant. However, restricted by time and resources, only a limited number of residents were approached and successfully interviewed. Future research could reach out to a wider range of residents at Guanhou Village to enhance the representativeness of the study. An in-house questionnaire survey could be conducted at each household to further understand their livelihood status, impacts to livelihood after GIAHS designation and aspirations for the future.

With multiple actors involved in GIAHS conservation and tourism development ranging from private to public, the role of government is of critical importance. Therefore, future studies should further examine the role of government, from village, county to district level in the planning and

management stages and the governance mechanism to enhance community participation and balance conservation and development needs at GIAHS sites.

Acknowledgments: Sincere thanks to colleagues of Xuanhua District Government and Xuanhua Grape Institute of Hebei Province and all interview participants for their generous supports. Special thanks to Yuanzhou Dong and Lingyi Jin for conducting the resident interview. This research was financially supported by China Scholarship Council, the Master Plan of Xuanhua Traditional Grape Garden (GIAHS) Conservation and Development (2016–2025), the Fundamental Research Funds for the Central Universities, the Research Funds of Renmin University of China (16XNB014), National Key R&D Program of China (2017YFC0506404), International Exchange and Cooperation Program by MOA, and Young Elite Scientist Sponsorship Program by CAST (2015QNRC001).

Author Contributions: Mingming Su and Yehong Sun together designed the research, conducted the interview, collected, analyzed the data and wrote the paper. Qingwen Min and Wenjun Jiao reviewed and offered recommendations for improvement of the manuscript prior to submission. All authors have read and approved the final manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Food and Agricultural Organization of the United States, 2017. Available online: <http://www.fao.org/giahs/become-a-giahs/selection-criteria-and-action-plan/en/> (accessed on 22 November 2017).
2. Sun, Y.; Min, Q.; Cheng, S. Value of the GIAHS-China traditional rice-fish system. *Chin. J. Eco-Agric.* **2008**, *16*, 991–994. (In Chinese) [[CrossRef](#)]
3. Jiao, W.; Min, Q. Reviewing the progress in the identification, conservation and management of China-Nationally Important Agricultural Heritage Systems (China-NIAHS). *Sustainability* **2017**, *9*, 1698. [[CrossRef](#)]
4. Min, Q.; Sun, Y. The concept, characteristics and conservation requirements of agro-cultural heritage. *Resour. Sci.* **2009**, *31*, 914–918. (In Chinese)
5. Min, Q.; Sun, Y.; Shi, Y. GIAHS project and its implementation in China. *J. Resour. Ecol.* **2010**, *1*, 94–96.
6. Sun, Y.; Jansen-verbeke, M.; Min, Q.; Cheng, S. Tourism potential of agricultural heritage systems. *Tour. Geogr.* **2011**, *13*, 112–128. [[CrossRef](#)]
7. Li, Z.; Zou, H.; Yi, Q. The agricultural cultural heritage tourism resources potential evaluation to terraces. *Econ. Geogr.* **2015**, *35*, 198–201. (In Chinese)
8. Tia, M.; Min, Q.; Lun, F. Evaluation of tourism water capacity in agricultural heritage sites. *Sustainability* **2015**, *7*, 15548–15569.
9. Sun, Y.; Zhou, H.; Wall, G.; Wei, Y. Cognation of disaster risk in a tourism community: An agricultural heritage system perspective. *J. Sustain. Tour.* **2017**, *25*, 536–553. [[CrossRef](#)]
10. He, L.; Min, Q.; Zhang, D. Evaluation models for multifunctionality of agriculture and their applications: A case study on Qingtian County in Zhejiang Province, China. *Resour. Sci.* **2010**, *32*, 1057–1064. (In Chinese)
11. Sun, Y.; Dela Cruz, M.; Min, Q.; Liu, M.; Zhang, L. Conserving agricultural heritage systems through tourism: Exploration of two mountainous communities in China. *J. Mt. Sci.* **2013**, *10*, 962–975. [[CrossRef](#)]
12. Zhang, Y.; Liu, M.; Min, Q. Calculation of price compensation of agriculture products in the period of organic conversion in agricultural heritage sites: Taking paddy rice of Hani terrace in Honghe County of Yunnan Province as an example. *J. Nat. Resour.* **2015**, *30*, 374–383. (In Chinese)
13. Liu, M.; Xiong, Y.; Yuan, Z.; Sun, Y. Standards of ecological compensation for traditional eco-agriculture: Taking rice-fish system in Hani terrace as an example. *J. Mt. Sci.* **2014**, *11*, 1049–1059. [[CrossRef](#)]
14. Bramwell, B.; Lane, B. Collaboration and partnerships for sustainable tourism. *J. Sustain. Tour.* **1999**, *7*, 179–181. [[CrossRef](#)]
15. Yuksel, F.; Bramwell, B.; Yuksel, A. Stakeholder interviews and tourism planning at Pamukkale, Turkey. *Tour. Manag.* **1999**, *20*, 351–360. [[CrossRef](#)]
16. Jansen-Verbeke, M.; Sun, Y. Cultural Heritage Resources of Traditional Agricultural Landscapes-inspired by Chinese Experiences. In *The Routledge Handbook of Cultural Tourism*, 1st ed.; Smith, M., Richards, G., Eds.; Routledge: London, UK, 2012; pp. 125–128. ISBN 9780415523516.
17. Sharpley, R. Rural tourism and the challenge of tourism diversification: The case of Cyprus. *Tour. Manag.* **2002**, *23*, 233–244. [[CrossRef](#)]

18. Sirima, A.; Backman, K.F. Communities' displacement from national park and tourism development in the Usangu Plains, Tanzania. *Curr. Issues Tour.* **2013**, *16*, 719–735. [[CrossRef](#)]
19. Su, M.; Wall, G.; Xu, K. Heritage tourism and livelihood sustainability of a resettled rural community: Mount Sanqingshan World Heritage Site, China. *J. Sustain. Tour.* **2016**, *24*, 735–757. [[CrossRef](#)]
20. Lee, M.H. Tourism and sustainable livelihoods: The case of Taiwan. *Third World Q.* **2008**, *29*, 961–978. [[CrossRef](#)]
21. Tao, T.; Wall, G. Tourism as a sustainable livelihood strategy. *Tour. Manag.* **2009**, *30*, 90–98. [[CrossRef](#)]
22. Bhandari, B.; Grant, M. Analysis of livelihood security: A case study in the Kali-Khola watershed of Nepal. *J. Environ. Manag.* **2007**, *85*, 17–26. [[CrossRef](#)] [[PubMed](#)]
23. Scoones, I. *Sustainable Rural Livelihoods: A Framework for Analysis*; IDS Working Paper No. 72; Sussex: Brighton, UK, 1998.
24. Ellis, F. *Rural Livelihoods and Diversity in Developing Countries*, 1st ed.; Oxford University Press: Oxford, UK, 2000; pp. 1–292, ISBN 0198296967.
25. Wu, M.; Pearce, P.L. Host tourism aspirations as a point of departure for the sustainable livelihoods approach. *J. Sustain. Tour.* **2013**, *22*, 440–460. [[CrossRef](#)]
26. Mbaiwa, J.E.; Stronza, A.L. The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana. *J. Sustain. Tour.* **2010**, *18*, 35–656. [[CrossRef](#)]
27. Chambers, R.; Conway, G. *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*; IDS Discussion Paper No. 296; Sussex: Brighton, UK, 1992.
28. Niehof, A. The significance of diversification for rurallivelihoodsystems. *Food Policy* **2004**, *29*, 321–338. [[CrossRef](#)]
29. Ashley, C. *The Impacts of Tourism on Rural Livelihoods: Namibia's Experience*; ODI Working Paper 128; Overseas Development Institute: London, UK, 2000.
30. Helmore, K.; Singh, N. *Sustainable Livelihoods: Building on the Wealth of the Poor*, 1st ed.; Kumarian Press: Bloomfield, CT, USA, 2001; pp. 1–128, ISBN 9781565491328.
31. Snider, R. Land Tenure, Ecotourism, and Sustainable Livelihoods: "Living on the Edge" of the Greater Maasai Mara, Kenya. Ph.D. Thesis, University of Waterloo, Waterloo, ON, Canada, July 2012.
32. Tao, T.; Wall, G. A livelihood approach to sustainability. *Asia Pac. J. Tour. Res.* **2011**, *14*, 137–152. [[CrossRef](#)]
33. Su, M.; Wall, G.; Xu, K.J. Tourism-induced livelihood changes at Mount Sanqingshan World Heritage Site, China. *Environ. Manag.* **2016**, *57*, 1024–1040. [[CrossRef](#)] [[PubMed](#)]
34. Su, M.; Wall, G.; Jin, M. Island livelihoods: tourism and fishing at Long Islands, Shandong Province, China. *Ocean Coast. Manag.* **2016**, *122*, 20–29. [[CrossRef](#)]
35. Xiang, Y. The World Heritage Site and the Local Communities. Ph.D. Thesis, University of Waterloo, Waterloo, ON, Canada, September 2009.



© 2018 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).