agriculture

MDPI

Article

Does the Identification of Important Agricultural Heritage Systems Promote Economic Growth? Empirical Analysis Based on County Data from China

Jingyi Li [1,2], Jiaxin He [3,4], Lun Yang [1] and Qingwen Min [1,2,*]

[1] Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101, China
[2] College of Resources and Environment, University of Chinese Academy of Sciences, Beijing 100049, China
[3] Guangzhou Institute of Energy Conservation, Chinese Academy of Sciences, Guangzhou 510650, China
[4] Guangdong Provincial Key Laboratory of New and Renewable Energy Research and Development, Guangzhou 510640, China
* Correspondence: minqw@igsnrr.ac.cn

Abstract: The protection and management of important agricultural heritage systems (IAHS) are essential to the sustainable economic and social development of heritage sites. Using the time-varying difference-in-differences (DID) model, this paper analyzes the influence of the identification of IAHS on economic growth and compares the difference between Globally Important Agricultural Heritage Systems (GIAHS) and China's Nationally Important Agricultural Heritage Systems (China-NIAHS). The results show that the identification of IAHS can significantly promote the economic growth of heritage sites, and the identification of GIAHS has a stronger role. Heterogeneity analysis shows that the economic driving effect of IAHS identification on heritage sites is affected by geographical location and poverty. The economic driving effect is stronger in Western China and in relatively poor areas. In addition, the influencing mechanism of regional economic growth after IAHS identification is discussed. The results show that IAHS identification can promote the development of the grain processing industry and the improvement of infrastructure construction, so as to increase the added value of secondary industries at heritage sites. Moreover, the level of heritage recognition leads to different policy tendencies. Among these, GIAHS identification significantly promotes investment growth, while China-NIAHS identification significantly promotes the population agglomeration of heritage sites.

Keywords: China-NIAHS; GIAHS; DID model; economic growth

Citation: Li, J.; He, J.; Yang, L.; Min, Q. Does the Identification of Important Agricultural Heritage Systems Promote Economic Growth? Empirical Analysis Based on County Data from China. *Agriculture* **2023**, *13*, 1745. https://doi.org/10.3390/agriculture13091745

Academic Editor: Sanzidur Rahman

Received: 29 July 2023
Revised: 26 August 2023
Accepted: 28 August 2023
Published: 2 September 2023

1. Introduction

Traditional agricultural systems have rich historical connections, play an important role in maintaining agricultural biodiversity and the agricultural landscape, and ensure food security [1], which makes them of high conservation value. In 2002, the Food and Agriculture Organization (FAO) of the United Nations launched a Global Partnership Initiative to conserve "Globally Important Agricultural Heritage Systems (GIAHS)", which aims to identify and protect typical traditional agricultural systems in various countries, maintain their multifaceted functions, improve the livelihoods of residents, and promote the sustainable development of heritage sites [2]. With inherent ecological and social sustainability [3], important agricultural heritage systems (IAHS) can provide a variety of tangible and intangible products and services for human survival and development, including material products and ecosystem services. They are a model of harmonious coexistence between human and nature.

However, due to the low economic benefits of traditional agriculture, most IAHS sites are located in relatively poor areas, and the protection of IAHS limits the mechanization

and urbanization process of heritage sites to some extent. With the increase in IAHS items and the expansion of the range of heritage sites, the relationship between the protection of IAHS and the socio-economic development of heritage sites has attracted the attention of researchers [4,5].

As China was the first country to launch the GIAHS pilot program and the selection of national IAHS, the Chinese government attaches great importance to the protection and management of IAHS and is engaged in many meaningful practices in balancing IAHS protection with the economic development of heritage sites [6,7]. For example, China took the lead in the promulgation of the world's first legal document on the management of IAHS, established a committee of experts on China's GIAHS and China-NIAHS, and has gradually formed a management system of "government-led, scientific argumentation, multiple-participant, hierarchical management, and classified guidance" [8]. The implementation of relevant policies has clarified the protection and management responsibilities of county-level governments where heritage sites are located and strives to combine the protection of IAHS with the development goals of reducing poverty in rural areas and promoting rural revitalization, attempting to promote the economic development of heritage sites via the management and rational utilization of IAHS [6–10].

In recent years, as IAHS have increasingly become a significant factor affecting the economic growth of counties in China, the identification and subsequent protection of IAHS have become a matter of concern to many scholars. It is necessary to clarify the relationship between the identification of IAHS and the economic development of the counties where heritage sites are located. However, most of the existing studies consider a single heritage site as an example of qualitative description or a case study; there are still deficiencies in macro-management research and empirical research. Therefore, in order to evaluate the economic effect of IAHS recognition, this paper analyzes economic growth at the county level in China using the time-varying difference-in-differences (DID) model and attempts to determine whether and how the economic growth of heritage sites has been affected by IAHS recognition (it is worth mentioning that the convenience of expression and understanding, "IAHS recognition/identification" in this paper includes the formal entry of agricultural systems into the GIAHS or China-NIAHS list and the policy measures taken by local governments to better protect, manage, and rationally utilize an IAHS) via quantitative analysis. In this study, we draw some interesting conclusions. IAHS designation can indeed drive economic growth in heritage sites, and this driving effect is heterogeneous in terms of geographical location and poverty level. This paper also discusses the mechanism of this driving effect and believes that IAHS may promote regional economic growth by promoting the development of secondary industries and increasing capital and human capital.

The subsequent structure of this article is organized as follows. The second chapter summarizes the existing literature. The third chapter introduces model design, variable definition, and data sources. The fourth chapter analyzes the regression results and provides robustness tests. The fifth chapter discusses the possible causes of economic benefits after IAHS recognition. The sixth chapter summarizes the conclusions with recommendations.

2. Literature Review

Against the international background of reducing the poor population and promoting the economic development of rural areas, establishing how to balance the relationship between IAHS protection and the economic development of heritage sites has become an important focus of scholars' attention. Studies have shown that IAHS contain rich ecological, cultural, germplasm, and other resources [11] that have high economic value [3,12,13] and are an important basis for the economic development of heritage sites. The brand effect formed after IAHS recognition can increase the amount of attention paid to IAHS [14–16] and change the efficiency of local resource utilization [17,18]. The good policies and management methods formulated by the government can further promote the economic development of IAHS sites. At present, relevant studies have involved agriculture and

tourism development [19–24], ecological compensation policies [25–27] and farmers' livelihoods expansion [28–31], which can be summarized based on the two aspects of industry development and farmers' income.

From the perspective of industrial development after IAHS designation, agricultural and tourism development is very common in IAHS heritage sites [3,8,32]. Research on agricultural development in heritage sites shows that IAHS mainly focus on traditional agricultural activities, so heritage sites often have one or more core agricultural products, which can attract people's attention with excellent quality and organic and green production methods [33]. Therefore, IAHS identification can usually promote the rapid development of ecological agriculture in the heritage sites, promote the cultivation of core agricultural products and the food processing industry, and promote the transformation of the ecological value of agricultural products [12,27,34–36] in heritage sites. Research on tourism in heritage sites has shown that IAHS contain beautiful agricultural landscapes and unique farming techniques, which are excellent tourist attractions [37]. Therefore, IAHS identification can usually promote the development of IAHS-related tourism [32,38] and increase the tourism income of heritage sites [38,39]. At the same time, the industrial integration development mode of tourism and other industries [40,41] formed in the process of the industrial development of heritage sites is also an important way to affect economic development, which can further promote economic growth through the interaction between industries [42,43].

From the perspective of the impact of IAHS recognition on farmers in heritage sites, it is generally believed that IAHS recognition significantly affects the income of farmers. Studies have found that after IAHS recognition, as the core agricultural products of heritage sites were recognized by more consumers, the price of core agricultural products increased, which increased the income of farmers [29]. At the same time, industrial development provides more jobs for heritage sites [35]. In particular, the development of tourism makes it possible for farmers to participate in catering, accommodation, and other tourism industries while engaging in agriculture [44]. Industrial development has further expanded the source of livelihood of farmers in heritage sites [45] and increased their income. Beyond these factors, the government's ecological compensation [34] and other financial support policies also affect the income and living standards of farmers.

Through the analysis of existing studies, we have observed that conservation and management after IAHS recognition can affect the economic growth of heritage sites, and many scholars believe that IAHS recognition can have positive effects on the economic development of heritage sites [46,47]. However, existing studies mostly start from typical cases and explain the impact of IAHS on economic growth through the changes in the selling prices of agricultural products and the changes in farmers' income, but lack a holistic and scientific assessment of the impact on a larger regional scope, especially empirical analysis in a longer period and a wider space. Therefore, this paper focuses on the economic impact of GIAHS and China-NIAHS recognition on heritage sites in China, measures the impact of IAHS recognition on economic growth, and further discusses the heterogeneity and mechanism of this impact.

3. Methods and Data

3.1. Model Design

In order to better measure the impact of the identification of IAHS on the economic growth of heritage sites, we selected the time-varying difference-in-differences (DID) model. Considering the endogeneity of panel data and other issues, this study controlled the time and individual fixed effects in the model, and performed clustering at the county level. The specific model is as follows:

$$Growth_{i,t} = \alpha_i + \beta_1 DID_{i,t} + \beta_2 Controls_{i.t} + T_t + \varepsilon_{i,t} \quad (1)$$

where the dependent variable (*Growth*) is the economic growth of each county i in the year t, which is measured using the gross domestic product. The core explanatory variable *DID* for

IAHS constitutes the difference-in-differences variables; if county i in year t is an IAHS site, the value of variable $DID_{i,t}$ is 1, and otherwise it is 0. When defining the starting year of the policy, considering that most county governments will take measures after the heritage projects are listed in GIAHS and China-NIAHS, this paper used the time point when the heritage site was officially recognized as the starting time of the policy. Meanwhile, in order to distinguish the difference effect of heritage sites identified at different time periods in the same year, this paper regards the recognition time of the heritage system whose identification date is in the first half of the year as belonging to the current year, and the recognition time of the heritage system whose identification date is in the second half of the year as belonging to the next year. At the same time, considering the different identification units, this variable can be divided into two variables: the GIAHS variable (*DIDG*) and the China-NIAHS variable (*DIDC*).

The Controls variables control the development differences between counties from different perspectives, such as industrial structure, financial dependence, residents' living standards, and human capital. α_i and T_t are the individual effect and time effect, respectively. ε_i is the error term and represents the interference term not observed.

3.2. Data and Variables

According to the identification time of IAHS, we selected the statistical data of various counties in China from 2000 to 2020. The research area covered all county-level administrative units (the data sample includes counties, municipal districts, and other county-level administrative units in China, which are collectively referred to as "counties" in this paper for the convenience of understanding) in China's 31 provinces, municipalities and autonomous prefectures, and the missing samples of GDP data were excluded. The data was obtained from statistics and websites, the economic data was obtained from China County Statistical Yearbook and China Statistical Yearbook for Regional Economy, and the heritage recognition time data was obtained from the website of the Food and Agriculture Organization of the United Nations (https://www.fao.org/giahs/en/ accessed on 10 July 2022) and the Ministry of Agriculture and Rural Affairs of the People's Republic of China (http://www.moa.gov.cn/ accessed on 10 July 2022).

The definitions of regression variables and descriptive statistical analysis are shown in Table 1.

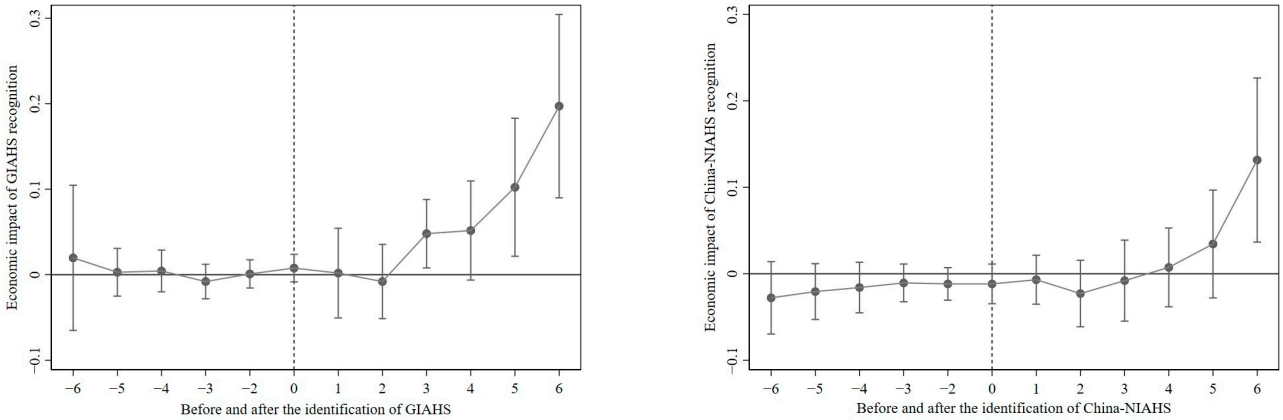
Table 1. Descriptive statistical analysis of variables.

Variable	Explanation	N	Mean	Std. Dev.	Min.	Max.
GDP	Logarithm of gross domestic product (ten thousand CNY)	46,422	13.247	1.393	8.040	18.345
GDP_pri	Logarithm of the value added of the primary industry (ten thousand CNY)	46,422	11.450	1.249	0.000	14.556
GDP_sec	Logarithm of secondary industry added value (ten thousand CNY)	46,422	12.250	1.669	−0.916	17.881
GDP_ter	Logarithm of the value added of the tertiary industry (ten thousand CNY)	46,422	12.190	1.456	7.100	17.360
DIDG	Dummy variable for the recognition of GIAHS, 1 after recognition and 0 for others	46,422	0.004	0.066	0.000	1.000
DIDC	Dummy variable for the recognition of China-NIAHS, 1 after recognition and 0 for others	46,422	0.013	0.114	0.000	1.000
Stru	Ratio of added value of secondary industry to the sum of added value of primary and tertiary industry	46,422	0.864	0.790	0.000	30.600
Gov	Logarithm of general budget expenditure of local finance (ten thousand CNY)	46,183	11.452	1.277	4.883	15.903
Sav	Logarithm of balance of savings deposits of urban and rural residents (ten thousand CNY)	42,846	12.681	1.535	1.946	17.298
POP	Ratio of population to area (person per square kilometer)	44,002	0.040	0.167	0.000	18.275
Edu	Human capital is represented by the proportion of primary and secondary school students	41,539	0.135	0.054	0.010	6.627
Med	Number of beds per unit population in medical and health institutions (beds per people)	40,921	0.003	0.002	0.000	0.215

4. Empirical Results

4.1. Parallel Trend Test

Meeting the test of parallel trends is an important prerequisite for the use of the difference-in-differences model. It can show that IAHS sites maintained basically the same economic growth trend as other regions before recognition without systemic differences. This paper considers the year before heritage recognition as the control year to conduct the parallel trend test for GDP (Figure 1). The figure shows that there is no obvious difference between the heritage site and other areas before the recognition of IAHS. After heritage recognition, the economic growth rate of heritage sites gradually becomes higher than that of other areas, and there is a certain lag period. It can be seen that from the third year after the recognition of GIAHS, and from the fourth year after the recognition of China-NIAHS, the economic growth of IAHS sites accelerates significantly.



(**a**) Parallel trend test for GIAHS identification (**b**) Parallel trend test for China-NIAHS identification

Note: The dashed lines represent the year the IAHS was identified. Each point represents the relative economic fluctuation of the site, where the economic growth of the year preceding IAHS designation is the base value.

Figure 1. Parallel trend test diagram.

4.2. Reference Regression

In order to maintain the sustainable development of heritage sites, the Chinese government has formulated corresponding protection and development measures after the designation of IAHS, hoping to promote the local economic and social development while protecting the IAHS. Many counties consider the protection and development of IAHS as an important means of regional development in their annual development plans.

Table 2 describes the impact of important agricultural heritage on county economic growth. The core explanatory variable of models (1)–(3) is the differential variable of GIAHS. The core explanatory variable of model (4)–(6) is the differential variable of China-NIAHS. The regression results show that the recognition of IAHS has a significant positive promoting effect on the growth of a county's economy, and after the recognition of GIAHS, the promotion effect on a county's economy is more significant and higher. Specific data show that the county economy of GIAHS is 6% higher than that of non-heritage sites on average, and that of China-NIAHS is 3.4% higher than that of non-heritage sites on average. This indicates that GIAHS have a higher economic effect and stronger economic driving ability. This paper assumes that the identification of IAHS provides a new opportunity for regional economic growth. Moreover, as the identification and monitoring measures of GIAHS are more strict, and its management and protection measures are studied and discussed by professional organizations and departments, the economic development of GIAHS has achieved better results than other regions. In addition, the recognition of IAHS has imposed a brand effect on the economic growth of heritage sites. As it is widely

believed that a higher level recognition has stricter requirements regarding quality, people have more trust in the products produced by GIAHS, which improves the attractiveness and brand effect of GIAHS.

Table 2. Regression results of IAHS recognition on county economic growth.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP
DIDG	0.082 *	0.064 **	0.060 **			
	(0.043)	(0.030)	(0.030)			
DIDC				0.021	0.037 *	0.034 *
				(0.034)	(0.021)	(0.020)
Stru		0.268 ***	0.265 ***		0.268 ***	0.265 ***
		(0.016)	(0.016)		(0.016)	(0.016)
Gov		0.215 ***	0.207 ***		0.216 ***	0.208 ***
		(0.014)	(0.014)		(0.014)	(0.014)
Sav		0.104 ***	0.111 ***		0.104 ***	0.111 ***
		(0.017)	(0.015)		(0.017)	(0.015)
POP		0.020 **	0.019 **		0.020 **	0.019 **
		(0.008)	(0.008)		(0.008)	(0.008)
Edu			−0.244 **			−0.243 **
			(0.113)			(0.113)
Med			15.949 ***			15.909 ***
			(3.034)			(3.033)
Constant	13.246 ***	9.174 ***	9.135 ***	13.246 ***	9.165 ***	9.128 ***
	(0.000)	(0.253)	(0.240)	(0.000)	(0.253)	(0.240)
N	46,372	42,167	38,971	46,372	42,167	38,971
R^2	0.973	0.982	0.984	0.973	0.982	0.984

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

4.3. Heterogeneity Analysis

4.3.1. Location Heterogeneity

China has a vast territory, the development of the east and west is unbalanced, and different regions have significant differences in the level of social and economic development. Considering the economic and technological development level and geographical location of the regions where the heritage sites are located, this paper refers to the practice of relevant studies [48] and divides the 31 provinces, municipalities, and autonomous regions of China into three groups according to the classification of China's "three economic zones": the eastern coastal zone, central zone, and western zone (_ea1, _ea2, _ea3). Then, dummy variables are created and multiplied by explanatory variables, respectively, to obtain six interaction terms. Table 3 shows the regression results when the core explanatory variables of the model are interactive items. The data show that the identification of IAHS acts as a negative hindrance on the economic development of heritage sites in the eastern region, and this phenomenon is particularly obvious in the influence of China-NIAHS. Meanwhile, the regression coefficients of the independent variables of model (3) and model (6) are significant at the significance level of 0.01, indicating that IAHS have a very obvious promoting effect on heritage sites in Western China. Among them, the influence coefficient of the GIAHS in the western region on heritage sites is 0.216, which means that the economic aggregate of heritage sites is 21.6% higher than that in other regions on average.

The reason for these results may be that districts and counties in different economic zones have obvious differences in terms of their economic base, social development level and resource ownership, affecting the rationality of heritage protection measures and the degree of policy implementation, and further affecting the degree of contribution to the economic growth of heritage sites after IAHS recognition. The eastern region has a high economic level, a high degree of mechanization, and relatively sound industrial development. The recognition of IAHS has a limited promoting effect on local economic development, which is far less than the hindering effect. Meanwhile, the economic development of the

western region is in still the initial stage, the modernization process is slow, the regional mechanization degree is low, and the regional industrial development space is large. The brand effect after the identification of IAHS enhances the market attractiveness of agricultural products from heritage sites, and may also attract investment in agricultural products' processing and other aspects, and so the promotion effect on the economy of heritage sites is far greater than the hindrance effect.

Table 3. Regression results of geographical location heterogeneity.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP
didg_ea1						
	(0.027)					
didg_ea2		0.008				
		(0.019)				
didg_ea3			0.216 ***			
			(0.039)			
didc_ea1				−0.046 **		
				(0.022)		
didc_ea2					−0.037	
					(0.043)	
didc_ea3						0.151 ***
						(0.029)
Stru	0.266 ***	0.266 ***	0.265 ***	0.265 ***	0.266 ***	0.265 ***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Gov	0.208 ***	0.208 ***	0.207 ***	0.208 ***	0.208 ***	0.207 ***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Sav	0.111 ***	0.111 ***	0.110 ***	0.111 ***	0.111 ***	0.111 ***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
POP	0.019 **	0.019 **	0.019 **	0.019 **	0.019 **	0.019 **
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Edu	−0.240 **	−0.241 **	−0.244 **	−0.237 **	−0.241 **	−0.242 **
	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)
Med	15.808 ***	15.842 ***	15.947 ***	15.733 ***	15.876 ***	15.927 ***
	(3.033)	(3.033)	(3.031)	(3.034)	(3.038)	(3.043)
Constant	9.132 ***	9.131 ***	9.148 ***	9.137 ***	9.132 ***	9.137 ***
	(0.240)	(0.240)	(0.240)	(0.240)	(0.240)	(0.240)
N	38,971	38,971	38,971	38,971	38,971	38,971
R^2	0.984	0.984	0.984	0.984	0.984	0.984

Note: ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

4.3.2. Poverty Heterogeneity

China began to identify impoverished counties in 1986, and by 2014, a total of 832 county-level administrative regions had been classified as "state poverty counties" after repeated adjustments. In order to more accurately explore whether significant differences exist in the impact of IAHS identification on poor areas and non-poor areas, this paper divides all counties into former poor counties and non-poor counties (_p, _n) according to the list of poor counties published by the National Rural Revitalization Administration, and uses the interaction term with the DID variables as the core explanatory variable for regression. The results are shown in Table 4. The regression results show that after the recognition of IAHS, the impact on poor areas is very significant. The regression coefficient of the independent variable is significant at the significance level of 0.01, and the impact coefficient of GIAHS is relatively high, which is 0.166, indicating that in the areas that used to be poor counties, the economic aggregate of IAHS sites was 16.6 percent higher than that in other areas on average, consistent with the previous analysis.

Table 4. Regression results of poverty degree heterogeneity.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP
didg_p	0.166 ***			
	(0.041)			
didg_n		−0.020		
		(0.027)		
didc_p			0.082 ***	
			(0.031)	
didc_n				−0.001
				(0.024)
Stru	0.265 ***	0.266 ***	0.265 ***	0.266 ***
	(0.016)	(0.016)	(0.016)	(0.016)
Gov	0.207 ***	0.208 ***	0.207 ***	0.208 ***
	(0.014)	(0.014)	(0.014)	(0.014)
Sav	0.110 ***	0.111 ***	0.110 ***	0.111 ***
	(0.015)	(0.015)	(0.015)	(0.015)
POP	0.019 **	0.019 **	0.019 **	0.019 **
	(0.008)	(0.008)	(0.008)	(0.008)
Edu	−0.244 **	−0.240 **	−0.241 **	−0.240 **
	(0.113)	(0.113)	(0.112)	(0.113)
Med	15.922 ***	15.816 ***	15.809 ***	15.840 ***
	(3.028)	(3.033)	(3.025)	(3.036)
Constant	9.144 ***	9.132 ***	9.140 ***	9.131 ***
	(0.240)	(0.240)	(0.240)	(0.240)
N	38,971	38,971	38,971	38,971
R^2	0.984	0.984	0.984	0.984

Note: ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

4.4. Robustness Test

4.4.1. Placebo Test

In order to further test the extent to which the regression results are affected by other non-observed factors or missing variables, this paper referred to the existing practice [49], randomly selected districts and counties as the pseudo-experimental group, and randomly selected years as the pseudo-identification time. On this basis, pseudo-differential variables were constructed for regression and the retrospective results were observed. In this paper, two regression results of GIAHS and China-NIAHS were considered. The above processes were repeated 500 times each, and 500 regression coefficients and P-values were obtained, respectively. The distribution of P-values and regression coefficients of the test results are shown in Figure 2. It can be seen that the estimated coefficients of the pseudo-variables in the two figures are centrally distributed around 0, and most of the P-values are higher than 0.1, indicating that there is no serious problem regarding missing variables in the model setting in this paper, and the benchmark regression results are robust.

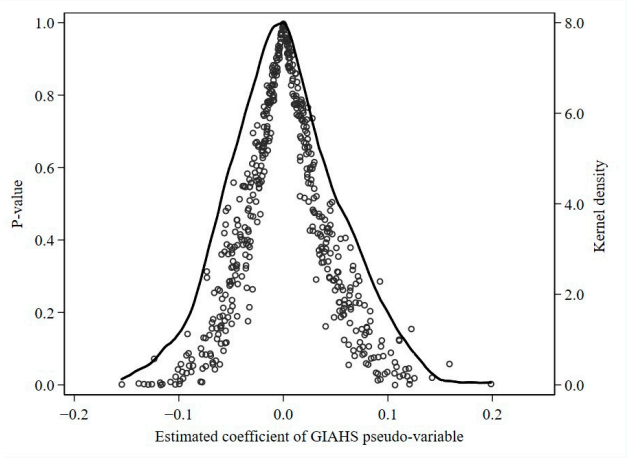
4.4.2. Variable Winsorization Test

In order to avoid the unrobust regression results caused by outliers, this paper carries out 1% tail-reduction treatment on regression variables. The regression results are shown in models (1) and (2) in Table 5. The regression coefficients of DID variables are significant and consistent with the benchmark regression results, indicating that the results in this paper are robust.

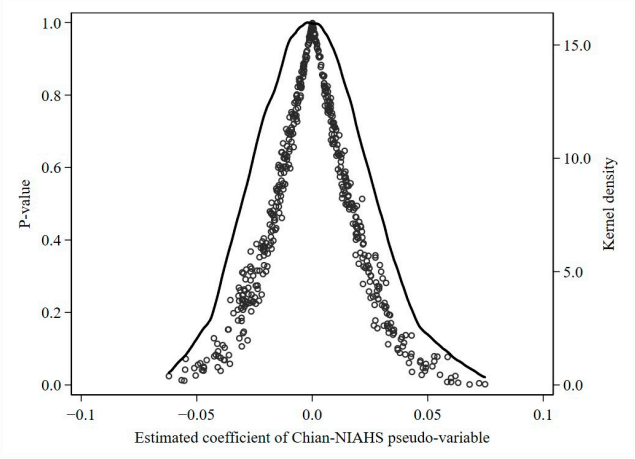
4.4.3. Change Control Variable Test

In order to test the robustness of the model, the method of replacing and adding control variables is adopted in this paper. Models (3) and (4) in Table 5 are regression results after adding control variables, wherein the variable Inform is the level of regional informatization, and Size is the area of administrative division. The regression results of

the model are consistent with the reference regression, which indicates that the regression results of this paper are robust.



(**a**) Placebo test chart for GIAHS identification



(**b**) Placebo test chart for China-NIAHS identification

Note: Each circle represents the regression coefficient of the virtual DID variable under the virtual heritage sites and random identification time.

Figure 2. Placebo test chart.

Table 5. Regression results of the robustness test.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP
DIDG	0.049 *		0.061 **		0.062 **	
	(0.028)		(0.030)		(0.030)	
DIDC		0.040 **		0.033 *		0.033 *
		(0.019)		(0.020)		(0.020)
DIDeco					0.025 **	0.024 **
					(0.010)	(0.010)
Stru	0.347 ***	0.347 ***	0.266 ***	0.265 ***	0.266 ***	0.266 ***
	(0.009)	(0.009)	(0.016)	(0.016)	(0.016)	(0.016)
Stru2						
Gov	0.215 ***	0.215 ***	0.207 ***	0.207 ***	0.205 ***	0.206 ***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Sav	0.153 ***	0.154 ***	0.110 ***	0.111 ***	0.108 ***	0.109 ***
	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)
POP	−0.304	−0.296	0.046 **	0.046 **	0.018 **	0.018 **
	(0.425)	(0.426)	(0.020)	(0.020)	(0.008)	(0.008)
Edu	0.009	0.008	−0.237 **	−0.236 **	−0.248 **	−0.246 **
	(0.126)	(0.126)	(0.112)	(0.112)	(0.113)	(0.113)
Med	24.633 ***	24.617 ***	15.952 ***	15.917 ***	16.092 ***	16.046 ***
	(2.856)	(2.857)	(2.966)	(2.964)	(3.037)	(3.036)
Inform			−0.003	−0.004		
			(0.025)	(0.025)		
Size			0.045 *	0.045 *		
			(0.026)	(0.026)		
_cons	8.401 ***	8.393 ***	8.794 ***	8.787 ***	9.190 ***	9.181 ***
	(0.226)	(0.226)	(0.319)	(0.319)	(0.241)	(0.241)
N	38,971	38,971	38,758	38,758	38,971	38,971
R^2	0.984	0.984	0.984	0.984	0.984	0.984

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

4.4.4. Multiple Policy Impact Test

IAHS have a high ecological function, and ecological compensation policies are usually adopted in the specific practice of their protection and management [3,50]. At the same

time, the production activities of IAHS sites depend on good ecosystems [51,52], and so many of them coincide with national key ecological function areas. During the investigation period of this paper, the establishment of national key ecological function areas and the implementation of ecological compensation mechanisms in functional areas were also factors affecting the economic development of heritage sites [53]. In order to eliminate the influence of the management of national key ecological function areas on IAHS sites, this paper collected the list of districts and counties of management of national key ecological function areas and the identification time, constructed the differential variables of national key ecological function areas (DIDeco), and added them into the benchmark regression model for regression again. Regression models (5) and (6) in Table 5 are the corresponding regression results. It can be seen that the regression coefficient of the core explanatory variable is still significant, which means that the economic driving effect of IAHS exists significantly, and the regression result is robust.

4.4.5. Subsample Test

According to the setting of county-level administrative units in China, we selected the samples of "county" and "municipal district" in the sample as subsamples, and carried out regression, respectively. Table 6 shows the regression results, in which model (1)–(2) indicate the regression results when "county" is the sample, and model (3) and (4) indicate the regression results when "municipal district" is the sample. According to the tabular data, it can be judged that the regression results of some samples are similar to the results of baseline regression, indicating that the results of baseline regression are robust.

Table 6. Regression results of the subsample test.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP
DIDG	0.081 **		0.066 ***	
	(0.037)		(0.025)	
DIDC		0.044 *		0.071
		(0.024)		(0.051)
Stru	0.275 ***	0.275 ***	0.208 ***	0.208 ***
	(0.021)	(0.021)	(0.022)	(0.022)
Gov	0.177 ***	0.177 ***	0.249 ***	0.251 ***
	(0.016)	(0.016)	(0.042)	(0.043)
Sav	0.108 ***	0.109 ***	0.163 ***	0.165 ***
	(0.015)	(0.015)	(0.039)	(0.039)
POP	0.016 **	0.016 **	0.070 ***	0.070 ***
	(0.007)	(0.007)	(0.013)	(0.013)
Edu	−0.261 ***	−0.259 **	0.231	0.235
	(0.101)	(0.101)	(0.429)	(0.429)
Med	14.269 ***	14.175 ***	25.270 ***	25.908 ***
	(3.190)	(3.182)	(7.715)	(7.715)
Constant	9.284 ***	9.272 ***	8.467 ***	8.420 ***
	(0.255)	(0.255)	(0.745)	(0.749)
N	28,119	28,119	3402	3402
R^2	0.982	0.982	0.980	0.980

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

5. Discussion

This paper explores the impact of IAHS identification on the economic development of counties where heritage sites are located through the time-varying DID model, then explores the heterogeneity and mechanism of this impact. The above empirical results show that the identification of IAHS significantly promoted the economic growth of the counties where heritage sites are located, especially in the western regions and relatively poor areas. This paper describes the economic impact brought about by IAHS identification, provides an empirical research idea for related research, and supplements the existing research, which is of great significance for the protection and management of IAHS.

In order to further discuss the specific path of IAHS recognition in promoting local economic growth, this paper replaced the variables and carried out regression again,

combined with the existing literature for analysis, attempting to explore the mechanism of IAHS identification affecting the economic growth of heritage sites and the factors through which the identified management measures have contributed to economic growth and to provide data support for these influence paths.

5.1. Impact on Different Industries

In order to explore the specific impact on different industries after the identification of IAHS, this paper replaced the explained variable with industrial added value and carried out regression again. The results are shown in Table 7. The core explanatory variable of models (1)–(3) is the DID variable of GIAHS. The core explanatory variable of model (4)–(6) is the DID variable of China-NIAHS. The regression results show that the recognition of IAHS can promote the different industries in heritage sites to different degrees. Among them, the regression coefficients of the independent variables of model (2) and model (4) are significant at the significance level of 0.01 and 0.05, respectively, indicating that the identification of IAHS items significantly promoted the growth of secondary industries in the heritage sites. In addition, the regression coefficient of the independent variables of model (2) is higher than that of model (4), indicating that the recognition of global IAHS has a more prominent role in promoting the economy of heritage sites, which is consistent with the result of the main regression.

Table 7. Regression results of the impact on different industries.

	(1) GDP_pri	(2) GDP_sec	(3) GDP_ter	(4) GDP_pri	(5) GDP_sec	(6) GDP_ter
DIDG	0.017	0.182 ***	0.027			
	(0.048)	(0.065)	(0.037)			
DIDC				0.035	0.090 **	0.012
				(0.028)	(0.037)	(0.023)
Stru	−0.042 ***	0.564 ***	−0.038 ***	−0.043 ***	0.564 ***	−0.038 ***
	(0.007)	(0.040)	(0.008)	(0.007)	(0.040)	(0.008)
Gov	0.157 ***	0.283 ***	0.228 ***	0.157 ***	0.283 ***	0.228 ***
	(0.014)	(0.022)	(0.016)	(0.014)	(0.022)	(0.016)
Sav	0.030 **	0.186 ***	0.170 ***	0.031 ***	0.187 ***	0.170 ***
	(0.012)	(0.026)	(0.021)	(0.012)	(0.026)	(0.021)
POP	0.022	−0.084	0.020 ***	0.022	−0.084	0.020 ***
	(0.015)	(0.055)	(0.004)	(0.015)	(0.055)	(0.004)
Edu	−0.608 ***	−0.081	−0.086	−0.609 ***	−0.076	−0.086
	(0.130)	(0.115)	(0.123)	(0.130)	(0.115)	(0.123)
Med	14.123 ***	13.088 ***	13.459 ***	14.162 ***	12.942 ***	13.435 ***
	(3.281)	(3.695)	(3.545)	(3.279)	(3.692)	(3.543)
Constant	9.426 ***	6.070 ***	7.312 ***	9.421 ***	6.049 ***	7.309 ***
	(0.207)	(0.352)	(0.306)	(0.207)	(0.353)	(0.306)
N	38,971	38,971	38,971	38,971	38,971	38,971
R^2	0.965	0.969	0.978	0.965	0.969	0.978

Note: ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

Existing studies have shown that the recognition of IAHS can produce a brand effect [16], and its driving effect on the industry development of heritage sites is mainly manifested in two aspects: the development of an agricultural industry chain dominated by core agricultural products and the development of a tourism industry chain dominated by heritage tourism [12,54]. Combined with the regression results, this paper assumes that the main reasons for promoting the industrial development of heritage sites after IAHS identification include the following two points: Firstly, in the development of the agricultural industry chain, IAHS identification mainly promotes the development of secondary industries, especially the agricultural and sideline food processing industry, food manufacturing industry, refined tea manufacturing industry, and other related industries (according to the "Industrial classification for national economic activities" regulation document in China, primary industries only include agriculture, forestry, animal husbandry, fishery, and auxiliary activities, while the agricultural and sideline product processing industry, food manufacturing, and refined tea manufacturing are all secondary industries). Secondly,

in the tourism industry chain, IAHS identification mainly promotes the construction of tourism infrastructure. As most of the existing IAHS sites in China are in relatively poor areas with relatively limited transportation links and communication [55], the development of tourism in heritage sites will inevitably improve the local infrastructure, which will be reflected in the rise of the output value of the secondary industries.

In order to verify whether the recognition of heritage will affect the economic development of heritage areas through the agricultural processing industry, this paper extracts core agricultural products from various IAHS. According to core agricultural products sources, IAHS are divided into four types: food crop systems, cash crop systems, animal breeding systems, and mixed breeding systems (crop1, crop2, crop3, crop4). Table 8 shows the regression results when the interaction term between IAHS types and the DID variable is the core explanatory variable. The results show that the food crop systems and mixed breeding systems had an obvious promoting effect on the economic development of heritage sites. Among the IAHS of the same type, GIAHS has a stronger economic driving effect on heritage sites, which is consistent with previous results. Further analysis found that compared with other core agricultural sources, food crops are more widely used, and processed by-products can be used as raw materials for other derivative industries [56], requiring more processing procedures. Therefore, food crop systems have a long agricultural industry chain and the industry chain development requires a higher scale of processing industry. As a result, food crop systems have a strong effect on the economic growth of the heritage area after it is recognized. In addition, there are more types of core agricultural products in mixed breeding systems and more industries are affected after IAHS identification, meaning that it plays a stronger role in the economic growth of heritage sites. The regression results in Table 8 verify the above analysis.

Table 8. Regression results of the impact on different types.

	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) GDP	(6) GDP	(7) GDP
didg_type1	0.099 *						
	(0.052)						
didg_type2		0.006					
		(0.039)					
didg_type4			0.164 ***				
			(0.054)				
didc_type1				0.031			
				(0.034)			
didc_type2					0.015		
					(0.028)		
didc_type3						0.049	
						(0.073)	
didc_type4							0.110 ***
							(0.039)
Stru	0.265 ***	0.266 ***	0.266 ***	0.266 ***	0.265 ***	0.266 ***	0.266 ***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Gov	0.208 ***	0.208 ***	0.208 ***	0.208 ***	0.208 ***	0.208 ***	0.208 ***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Sav	0.111 ***	0.111 ***	0.111 ***	0.111 ***	0.111 ***	0.111 ***	0.111 ***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
POP	0.019 **	0.019 **	0.019 **	0.019 **	0.019 **	0.019 **	0.019 **
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Edu	−0.243 **	−0.241 **	−0.241 **	−0.242 **	−0.241 **	−0.241 **	−0.242 **
	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)
Med	15.910 ***	15.847 ***	15.858 ***	15.861 ***	15.855 ***	15.850 ***	15.882 ***
	(3.028)	(3.034)	(3.033)	(3.029)	(3.035)	(3.035)	(3.033)
Constant	9.136 ***	9.131 ***	9.135 ***	9.133 ***	9.129 ***	9.131 ***	9.131 ***
	(0.240)	(0.240)	(0.240)	(0.240)	(0.240)	(0.240)	(0.240)
N	38,971	38,971	38,971	38,971	38,971	38,971	38,971
R^2	0.984	0.984	0.984	0.984	0.984	0.984	0.984

Note: At present, there is no animal breeding systems (type3) in China's GIAHS. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

5.2. Impact on Input Factor

Human capital and capital input are important factors affecting economic growth [57–59] and in protecting IAHS [60]. In order to further explore the influence of IAHS identification on the economic input factors of heritage sites, this paper replaced the dependent variable with the rural working population and fixed asset investment (Wpop, Inve), then returned the population flow and investment in heritage sites, respectively. Table 9 shows the regression results. The explained variable of models (1) and (2) is the rural working population, and the explained variable of models (3) and (4) is fixed asset investment. The results show that the rural working population of China-NIAHS sites is significantly greater than that of other regions, while the capital input of GIAHS sites is significantly higher than that of other regions, and the regression coefficients are all significant at a significance level of 0.1. The results suggest that IAHS identification can affect regional economic growth by affecting the working population and capital investment in the heritage sites. In addition, there are differences between China-NIAHS and GIAHS in the impact on factor inputs.

Table 9. Regression results of the impact on input factors.

	(1) Wpop	(2) Wpop	(3) Inve	(4) Inve
DIDG	0.194		0.578 *	
	(0.617)		(0.336)	
DIDC		0.717 *		0.133
		(0.430)		(0.165)
Stru	−0.254 ***	−0.256 ***	0.046 *	0.045 *
	(0.055)	(0.056)	(0.027)	(0.026)
Gov	0.361 **	0.364 **	0.159 ***	0.161 ***
	(0.144)	(0.144)	(0.056)	(0.056)
Sav	0.209 **	0.212 **	−0.260 ***	−0.259 ***
	(0.105)	(0.105)	(0.043)	(0.043)
POP	−0.396	−0.395	0.001	0.001
	(0.256)	(0.256)	(0.006)	(0.006)
Edu	2.046 ***	2.027 ***	−0.736 **	−0.721 **
	(0.765)	(0.762)	(0.312)	(0.311)
Med	−78.318 ***	−77.522 ***	41.201 ***	40.654 ***
	(24.870)	(24.721)	(10.941)	(10.911)
Constant	14.707 ***	14.630 ***	2.086 ***	2.046 ***
	(2.100)	(2.094)	(0.772)	(0.771)
N	30,857	30,857	28,146	28,146
R^2	0.987	0.987	0.714	0.714

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Values in brackets are standard errors.

Combined with the existing literature, we find that there are significant differences in the internal mechanisms of GIAHS and China-NIAHS in promoting economic growth. The economic growth of GIAHS sites is dominated by increased investment. After GIAHS recognition, the government of heritage sites increased the capital input in the process of infrastructure construction investment [41], ecological compensation investment [27], and distinctive brand building [61], improving the basic implementation [62] and promoting the economic development of these heritage sites [63–65]. The economic growth of China-NIAHS sites is mainly due to the increase in human capital. After China-NIAHS recognition, the industrial development of the heritage site provides more jobs [66], attracts the return of the labor force and the gathering of highly capable personnel [67], provides necessary human capital support for the heritage site [68], and promotes local economic growth.

6. Conclusions and Suggestions

6.1. Conclusions

Since the "Globally Important Agricultural Heritage Systems" program was launched by FAO, 23 countries have carried out IAHS declaration and protection, providing strong support for the protection of agricultural heritage and the sustainable development of her-

itage sites. The results of this study show that IAHS identification effectively promotes the economic growth of heritage sites and GIAHS identification has a more obvious promoting effect. The heterogeneity analysis results show that the economic growth degree of heritage sites is also affected by geographical location and poverty degree. IAHS has the largest promoting effect on the economic growth of the western region, and has an inhibiting effect on the economic growth of the eastern region. In addition, the promoting effect on the economic growth of once poor counties is much higher than that of non-poor counties. Then, this paper analyzed the influence mechanism of IAHS in promoting the economic development of the county where the IAHS site is located. The analysis results show that IAHS identification strongly promoted the development of secondary industry at IAHS sites, especially the development of the grain processing industry. At the same time, there are differences in the mechanism of promoting economic growth after the recognition of GIAHS and China-NIAHS. After GIAHS identification, the regional economic growth is affected by increasing investment, while after IAHS identification, the economic growth is promoted by improving human capital.

The results of this paper prove th"t IAHS identification can effectively promote the industrial development and economic growth of heritage sites, which is beneficial to the development of the regional economy and society while protecting IAHS. Therefore, potential agricultural heritage systems can actively declare IAHS and increase regional awareness and product brand value through their identification. In addition, China-NIAHS are abundant in number and type, but their promoting effect on sustainable economic and social development of heritage sites is relatively weak. It is possible to establish professional organizations or improve the management system, including identification, monitoring, and withdrawal, optimize management measures, and raise the threshold of identification, so as to improve the quality of China-NIAHS and further promote local economic development.

6.2. Suggestions and Prospects

At present, the protection and development path of IAHS is still under exploration. Although some scholars have summarized the conservation and development mode of IAHS [61], more IAHS are still trying to find a suitable development mode. Based on the results of this study and the actual situation, we put forward some management suggestions and incentive measures, hoping to help the protection and development of IAHS.

First of all, IAHS identification has become a way to promote economic development in China's traditional agricultural areas, but due to the bottom-up declaration system, some typical areas have not been discovered. Therefore, the state should increase the intensity of IAHS exploration and identification, so that the county government can realize the importance of IAHS, especially in the western region and poor areas, which should be encouraged to actively explore potential heritage sites and apply for IAHS projects, so as to exert the positive effect of IAHS recognition. Secondly, in the process of the dynamic conservation and adaptive management of IAHS, heritage sites should pay attention to the role of policy guidance and financial support in the economic process driven by IAHS. Among them, the government of heritage sites can establish a good talent introduction policy to attract more workers, keep IAHS alive, and accumulate human capital to promote regional industrial development and economic growth. The government can also formulate appropriate industrial development policies and enterprise support policies to provide a good policy environment for the growth of enterprises and industrial development, among which cultivating "leading enterprises" is usually a good method. In addition, capital investment is also an important factor in the economic development of heritage sites, especially in Western China and relatively poor areas. The government of heritage sites can integrate central government financial funds, bank loans, social financing, and other funds to increase capital investment in heritage sites, especially for improving the roads, networks, water and electricity supply, and other infrastructure of heritage sites and residents' living environment, so as to lay the foundation for the development of agriculture and tourism in

the IAHS sites. Finally, considering that China-NIAHS are abundant in quantity and type, but play a weak role in promoting the economic development of heritage sites, we propose establishing professional organizations or improving the management system, including identification, monitoring, and withdrawal, optimizing management measures and raising the threshold of recognition, so as to improve the quality of China-NIAHS and further promote the economic development of heritage sites.

In addition, due to the limitations of the data, this study failed to test the impact of IAHS recognition on the development of the tourism industry and tourism income. At the same time, scholars still have not unified standards regarding which indicators can better reflect the growth of the regional tourism industry. In future studies, the impact of IAHS identification on the tourism industry in heritage sites can be further studied.

Author Contributions: Conceptualization, J.H.; methodology, J.H.; software, J.L.; validation, J.H.; formal analysis, J.L.; investigation, J.H.; resources, J.L.; data curation, J.H.; writing—original draft preparation, J.L.; writing—review and editing, L.Y. and Q.M.; visualization, J.L.; supervision, Q.M.; project administration, J.L.; funding acquisition, Q.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Strategic Priority Research Program of the Chinese Academy of Sciences, grant number XDA23100203.

Institutional Review Board Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the authors.

Acknowledgments: The authors thank the editor and the anonymous reviewers for their helpful comments on this manuscript.

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

References

1. Parviz, K.; Mary, J.D.C. Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS). *J. Resour. Ecol.* **2011**, *2*, 22–28.
2. Cruz, M.J.D.; Koohafkan, P. Globally lmportant Agricultural Heritage Systems: A Shared Vision of Agricultural, Ecological and Traditional Societal Sustainability. *Resour. Sci.* **2009**, *31*, 905–913.
3. Jiao, W.J.; Cui, W.C.; Min, Q.W.; Zhang, Y.X. A review of research on agricultural heritage systems and their conservation. *Resour. Sci.* **2021**, *43*, 823–837.
4. Ming, L.; Siming, W. Difficulties and Countermeasures of Agro-cultural Heritage Protection. *J. Huazhong Agric. Univ. Soc. Sci. Ed.* **2012**, *29*, 25–33.
5. Yi, S.L.; Wu, N.; Luo, P.; Wang, Q.; Shi, F.S.; Zhang, Q.Y.; Ma, J.Z. Agricultural heritage in disintegration: Trends of agropastoral transhumance on the southeast Tibetan Plateau. *Int. J. Sustain. Dev. World Ecol.* **2008**, *15*, 273–283. [CrossRef] [PubMed]
6. Min, Q.; Zhang, Y.; Jiao, W.; Sun, X. Responding to common questions on the conservation of agricultural heritage systems in China. *J. Geogr. Sci.* **2016**, *26*, 969–982. [CrossRef]
7. Zhang, Y.; Li, X.; Min, Q. How to balance the relationship between conservation of Important Agricultural Heritage Systems (IAHS) and socio-economic development? A theoretical framework of sustainable industrial integration development. *J. Clean. Prod.* **2018**, *204*, 553–563. [CrossRef]
8. Min, Q.; Zhang, B. Research Progress in the Conservation and Development of China-Nationally Important Agricultural Heritage Systems (China-NIAHS). *Sustainability* **2020**, *12*, 126. [CrossRef]
9. Fuller, A.M.; Min, Q.; Jiao, W.; Bai, Y. Globally Important Agricultural Heritage Systems (GIAHS) of China: The challenge of complexity in research. *Ecosyst. Health Sustain.* **2015**, *1*, 1–10. [CrossRef]
10. Zhang, S. Agricultural heritage tourism development and heritage conservation: A case study of the Samaba Rice Terraces, Yunnan, China. *J. Herit. Tour.* **2022**, *17*, 357–370. [CrossRef]
11. Hu, W.F.; Zhang, Y.X.; Wang, W.Q.; Min, Q.W.; Zhang, W.L.; Ceng, C.S. Landscape characteristics and utilization in agro-cultural heritage systems in Lianhe Terrace. *Chin. J. Eco-Agric.* **2017**, *25*, 1752–1760.
12. Liu, G.; Huang, H.; Zhou, J. Energy analysis and economic assessment of a rice-turtle-fish co-culture system. *Agroecol. Sustain. Food* **2019**, *43*, 299–309. [CrossRef]
13. Liu, J.F.; Zhang, Q.; Wang, Q.Y.; Lv, Y.P.; Tang, Y.Q. Gross Ecosystem Product Accounting of a Globally Important Agricultural Heritage System: The Longxian Rice–Fish Symbiotic System. *Sustainability* **2023**, *15*, 10407. [CrossRef]
14. Zheng, Q.; Zhang, S.; Liang, J.; Chen, Y.; Ye, W. The Impact of Cultural Memory and Cultural Identity in the Brand Value of Agricultural Heritage: A Moderated Mediation Model. *Behav. Sci.* **2023**, *13*, 79. [CrossRef]

15. Zhang, L.; Yang, S.; Wang, D.; Ma, E. Perceived value of, and experience with, a World Heritage Site in China—the case of Kaiping Diaolou and villages in China. *J. Herit. Tour.* **2022**, *17*, 91–106. [CrossRef]
16. He, S.Y.; Min, Q.W.; Li, H.Y.; Liu, M.C.; Jiao, W.J.; Bai, Y.Y. Value typology and evaluation of Important Agricultural Heritage Systems. *Chin. J. Eco-Agric.* **2020**, *28*, 1314–1329.
17. Su, M.M.; Dong, Y.; Wall, G.; Sun, Y. A value-based analysis of the tourism use of agricultural heritage systems: Duotian Agrosystem, Jiangsu Province, China. *J. Sustain. Tour.* **2020**, *28*, 2136–2155. [CrossRef]
18. Min, Q.; Wang, B.; Sun, Y. Progresses and Perspectives of the Resource Evaluation Related to Agri-Cultural Heritage Tourism. *J. Resour. Ecol.* **2022**, *13*, 708–719.
19. Sun, Y.; Jansen-Verbeke, M.; Min, Q.; Cheng, S. Tourism Potential of Agricultural Heritage Systems. *Tour. Geogr.* **2011**, *13*, 112–128. [CrossRef]
20. Sun, Y.; Song, Y.; Chen, Y.; Yao, C.; Li, W. Sustainable or Not? Tourism Development in Agricultural Heritage Sites. *J. Resour. Ecol.* **2021**, *12*, 543–554.
21. Zhu, G.; Li, X.; Zhang, Y. Multi-Stakeholder Involvement Mechanism in Tourism Management for Maintaining Terraced Landscape in Important Agricultural Heritage Systems (IAHS) Sites: A Case Study of Dazhai Village in Longji Terraces, China. *Land* **2021**, *10*, 1146. [CrossRef]
22. Fuller, A.M.; Bao, J.; Liu, Y.; Zhou, X. Establishing tourism sustainability in a globally important agricultural heritage system in China: A case of social and eco-system recovery. *Growth Chang.* **2022**, *53*, 1267–1281. [CrossRef]
23. Wang, Y.; Sun, Y.; Gu, X.; Wu, W.; Yao, C. Study on the adaptability of traditional architecture in agricultural heritage sites after tourism intervention—A case study of Huzhou Digang Food Street in China. *Built Herit.* **2022**, *6*, 34. [CrossRef]
24. Xu, X.Q.; Wang, B.X. Evaluation System of Tourist Attraction and Tourist Market and Development Strategies of Agricultural Heritages in Zhejiang. *Econ. Geogr.* **2021**, *41*, 232–240.
25. Liu, M.; Bai, Y.; Su, B. Analysis of the Hotspots of Ecological Compensation Research in China in the Past 20 Years Based on a Bibliometric Study. *J. Resour. Ecol.* **2022**, *13*, 80–92.
26. Liu, M.; Bai, Y.; Yang, L.; Wang, B. Calculation of Ecological Compensation Standards for the Kuancheng Traditional Chestnut Cultivation System. *J. Resour. Ecol.* **2021**, *12*, 471–479.
27. Liu, M.; Xiong, Y.; Yuan, Z.; Min, Q.; Sun, Y.; Fuller, A.M. Standards of ecological compensation for traditional eco-agriculture: Taking rice-fish system in Hani terrace as an example. *J. Mt. Sci. Engl.* **2014**, *11*, 1049–1059. [CrossRef]
28. Lu, J.; Li, X. Review of rice–fish-farming systems in China—One of the Globally Important Ingenious Agricultural Heritage Systems (GIAHS). *Aquaculture* **2006**, *260*, 106–113. [CrossRef]
29. Su, M.; Sun, Y.; Min, Q.; Jiao, W. A Community Livelihood Approach to Agricultural Heritage System Conservation and Tourism Development: Xuanhua Grape Garden Urban Agricultural Heritage Site, Hebei Province of China. *Sustainability* **2018**, *10*, 361. [CrossRef]
30. Yang, L.; Yang, J.; Jiao, W.; Liu, M.; Li, W. The Evaluation of Food and Livelihood Security in a Globally Important Agricultural Heritage Systems (GIAHS) Site. *J. Resour. Ecol.* **2021**, *12*, 480–488.
31. Jiao, W.; Yu, Z.; Sun, Y.; Liu, Y. An Analytical Framework for Formulating Conservation and Development Measures for Important Agricultural Heritage Systems. *Sustainability* **2023**, *15*, 4439. [CrossRef]
32. 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]
33. Xie, J.; Wu, X.; Tang, J.; Zhang, J.; Luo, S.; Chen, X. Conservation of Traditional Rice Varieties in a Globally Important Agricultural Heritage System (GIAHS): Rice-Fish Co-Culture. *Agric. Sci. China* **2011**, *10*, 754–761. [CrossRef]
34. Liu, M.; Yang, L.; Bai, Y.; Min, Q. The impacts of farmers' livelihood endowments on their participation in eco-compensation policies: Globally important agricultural heritage systems case studies from China. *Land Use Policy* **2018**, *77*, 231–239. [CrossRef]
35. Liu, M.C.; Bai, Y.X.; Yang, L.; Jiao, W.J. Impacts of eco-compensation on the farmers' production behavior of Hani Rice Terraces in China. *Chin. J. Eco-Agric.* **2020**, *28*, 1339–1349.
36. Liu, M.C.; Zhang, D.; Li, W.H. Evaluation of comprehensive benefit of rice-fish agriculture and rice monocropping—A case study of Qingtian County, Zhejiang Province. *Chin. J. Eco-Agric.* **2010**, *18*, 164–169. [CrossRef]
37. Tang, D.; Zheng, Q.; Xu, B.; Zheng, M.; Chen, J. Value of nostalgia to agricultural heritage: Consumer's nostalgia proneness and purchase intention toward traditional tea. *J. Clean. Prod.* **2023**, *395*, 136411. [CrossRef]
38. Liu, J.; Leng, Z.M.; Liu, J.P.; Xiao, H.J.; Yin, Y.C.; Chen, Y. Spatial Distribution Characteristics and Tourism Response of Important Agricultural Cultural Heritage in China. *Econ. Geogr.* **2021**, *41*, 205–212.
39. Sun, Y.H.; Min, Q.W.; Cheng, S.K.; Wang, X.H. Relationship between Tourism Resources Development and Regional Social and Economic Development in Agricultural Heritage Site—Taking "Traditional Rice-Fish Agriculture" of Qingtian County as an Example. *Resour. Sci.* **2006**, *04*, 138–144.
40. Zhang, Y.; Li, X. Protecting Traditional Agricultural Landscapes by Promoting Industrial Integration Development: Practices from Important Agricultural Heritage Systems (IAHS) Sites in China. *Land* **2022**, *11*, 1286. [CrossRef]
41. Jia, H.K.; Lu, Y. Agricultural Cultural Heritage and Rural Revitalization: Explanation and Analysis Based on the Theory of New Structural Economics. *J. Nanjing Agric. Univ. Soc. Sci. Ed.* **2021**, *21*, 53–61.
42. Cao, L.; Li, L.; Wu, Y.; Zeng, W. Does industrial convergence promote regional metabolism? Evidence from China. *J. Clean. Prod.* **2020**, *273*, 123010. [CrossRef]

43. Zhao, M.; Wang, R.Z. Study on the Influence of Cultural and Tourism Industry Integration on Economic Growth in Ethnic Areas—Econometric analysis based on 2000-2019 data. *Natl. Res. Qinghai* **2022**, *33*, 211–219.
44. Jiao, W.; Fuller, A.M.; Xu, S.; Min, Q.; Wu, M. Socio-Ecological Adaptation of Agricultural Heritage Systems in Modern China: Three Cases in Qingtian County, Zhejiang Province. *Sustainability* **2016**, *8*, 1260. [CrossRef]
45. Yang, L.; Sun, J.; Liu, M.C.; Min, Q.W. Agricultural production under rural tourism on the Qinghai-Tibet Plateau: From the perspective of smallholder farmers. *Land Use Policy* **2021**, *103*, 105329.
46. Sun, Y.; Dela Cruz, M.J.; Min, Q.; Liu, M.; Zhang, L. Conserving agricultural heritage systems through tourism: Exploration of two mountainous communities in China. *J. Mt. Sci. Engl.* **2013**, *10*, 962–975. [CrossRef]
47. Cui, F.; Li, M.; Wang, S.M. Study on the Relation Between Agro-cultural Heritage Protection and Regional Economic, Social Development: Taking Xinghua's Duotian in Jiangsu Province as an Example. *China Popul. Resour. Environ.* **2013**, *23*, 156–164.
48. Tang, W. Decentralization and development of small cites: Evidence from county-to-city upgrading in China. *China Econ. Q. Int.* **2021**, *1*, 191–207. [CrossRef]
49. Chen, Y.; Xu, Z.; Zhang, Z.; Ye, W.; Yang, Y.; Gong, Z. Does the carbon emission trading scheme boost corporate environmental and financial performance in China? *J. Clean. Prod.* **2022**, *368*, 133151. [CrossRef]
50. Liu, M.; Liu, W.; Yang, L.; Jiao, W.; He, S.; Min, Q. A dynamic eco-compensation standard for Hani Rice Terraces System in southwest China. *Ecosyst. Serv.* **2019**, *36*, 100897. [CrossRef]
51. Jiao, W.; Cui, W.; He, S. Can agricultural heritage systems keep clean production in the context of modernization? A case study of Qingtian Rice-Fish Culture System of China based on carbon footprint. *Sustain. Sci.* **2023**, *18*, 1397–1414. [CrossRef]
52. He, S.Y.; Jiao, W.J.; Min, Q.W. The Transition of the Food System for A Nature-positive World: A GIAHS-based Solution. *J. Ecol. Rural. Environ.* **2022**, *38*, 1249–1257.
53. Ma, B.; Sun, Y.D.; Qin, L. Counties' economic effect of ecological protection policies in China: Evidence from national key ecological function zones. *China Environ. Sci.* **2022**, *42*, 5928–5940.
54. Zhang, Y.; He, L.; Li, X.; Zhang, C.; Qian, C.; Li, J.; Zhang, A. Why are the Longji Terraces in Southwest China maintained well? A conservation mechanism for agricultural landscapes based on agricultural multi-functions developed by multi-stakeholders. *Land Use Policy* **2019**, *85*, 42–51. [CrossRef]
55. Sun, Y.H.; Min, Q.W.; Cheng, S.K.; Zhong, L.S.; Qi, X.B. Study on the Tourism Resource Characteristics of Agricultural Heritage. *Tour. Trib.* **2010**, *25*, 57–62.
56. Liu, X.Y.; Zhu, Y.; Liu, Y.J.; Wang, J.; Li, H.H.; Sun, J.Y.; Zhao, D.R.; Sun, X.T.; Sun, B.G.; He, Y.H. Development Status and Countermeasures of Agricultural Products Processing Industry in China. *J. Agric. Sci. Technol.* **2022**, *24*, 6–13.
57. Chang, X.; Shi, Y. The Econometric Study on Effects of Chinese Economic Growth of Human Capital. *Procedia Comput. Sci.* **2016**, *91*, 1096–1105. [CrossRef]
58. Zhang, X.; Wang, X. Measures of human capital and the mechanics of economic growth. *China Econ. Rev.* **2021**, *68*, 101641. [CrossRef]
59. Zhang, Y.; Kumar, S.; Huang, X.; Yuan, Y. Human Capital Quality and the Regional Economic Growth: Evidence from China. *J. Asian Econ.* **2023**, *86*, 101593. [CrossRef]
60. Qiu, Z.; Chen, B.; Takemoto, K. Conservation of terraced paddy fields engaged with multiple stakeholders: The case of the Noto GIAHS site in Japan. *Paddy Water Environ.* **2014**, *12*, 275–283. [CrossRef]
61. Yang, L.; Wang, G.P.; Min, Q.W. From Theory to Practice: The Main Conservation and Development Models of the Important Agricultural Heritage Systems in China. *Study Nat. Cult. Herit.* **2020**, *5*, 10–18.
62. Su, M.M.; Wang, M.; Yu, J.; Wall, G.; Jin, M. Measuring Tourism Impacts on Community Well-being at the Hani Rice Terraces GIAHS Site, Yunnan Province of China. *Soc. Nat. Resour.* **2023**, *36*, 796–820. [CrossRef]
63. Cui, Y.; Sun, Y. Social benefit of urban infrastructure: An empirical analysis of four Chinese autonomous municipalities. *Util. Policy* **2019**, *58*, 16–26. [CrossRef]
64. Shi, Y.; Guo, S.; Sun, P. The role of infrastructure in China's regional economic growth. *J. Asian Econ.* **2017**, *49*, 26–41. [CrossRef]
65. Zhang, Y.; Li, X.; Min, Q. Transportation Accessibility of Central Towns in Important Agricultural Heritage Systems Sites in Mountainous Areas and Its Impact on Local Economic Development: A Case Study of Honghe Hani Rice Terraced System, Yunnan. *J. Resour. Ecol.* **2019**, *10*, 29–38.
66. Bai, Y.; Sun, X.; Tian, M.; Anthony, M.F. Typical Water-Land Utilization GIAHS in Low-Lying Areas: The Xinghua Duotian Agrosystem Example in China. *J. Resour. Ecol.* **2014**, *5*, 320–327.
67. Liu, M.C.; Su, B.R.; Min, Q.W.; Li, W.H. The mechanism and approach of agricultural heritage promoting rural revitalization. *Res. Agric. Mod.* **2022**, *43*, 551–558.
68. Jia, H.K.; Chen, H.; Lu, Y. Research on the Mechanism of the Active Protection of Agricultural Heritage Systems on the Return of Labor: A Case Analysis Based on Grounded Theory. *J. Ethn. Cult.* **2021**, *13*, 131–142.