

**Research Report on Poverty Reduction and  
Income Increase from Dynamic Conservation  
of Globally Important Agricultural Heritage  
Systems(GIAHS) in China**

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# **Research Report on Poverty Reduction and Income Increase from Dynamic Conservation of Globally Important Agricultural Heritage Systems (GIAHS ) in China**

China has witnessed an evolving process of rural poverty reduction in three phases: relief-based, development-oriented and targeted. It has made world-acknowledged achievements in this field thanks to its persistent exploration over more than 70 years since the founding of the People's Republic of China, especially in the reform and opening-up process of more than 40 years. According to the 2010 standard for rural poverty line in China, the rural impoverished population in China was reduced from 770.39 million in 1978 to none in 2020, representing an annual average reduction of 18.34 million and a drop of rural poverty incidence from 97.5% to zero over this period. Such remarkable progress results from the integrated poverty reduction efforts based on development, urbanization and policies. In recent years, the outcomes of poverty reduction and the increase in farmers' income at Globally Important Agricultural Heritage Systems (GIAHS) sites have proved the good effects of China's accomplishments in this regard.

The year 2020 marked the 15th anniversary of China's first GIAHS site, Qingtian Rice-Fish Culture System in Zhejiang. It is also the final year of China's programme to implement precision poverty alleviation and win the fight against poverty. China is home to 15 GIAHS sites, ranking first in the world. The year 2020 is also the last episode for its targeted poverty reduction campaign. Ten of the 15 GIAHS sites are situated in the less developed areas of central and western China and 60% of their localities are tasked with eradicating poverty. In recent years, the GIAHS sites have served as good examples of turning "the lucid waters and lush mountains" into "invaluable assets" that help the local residents to fight against poverty and increase their income on the basis of effective conservation and full exploitation of biotic resources, cultural connotation, and landscape advantages of those sites.

## **I. Current status on poverty and income at the GIAHS localities**

The core areas of the 15 GIAHS sites cover 312,000 farming households, or 913,000 residents. The number of farming households in each of the core areas varies widely due to their different sizes. The core area of Honghe Hani Rice Terraces System in Yunnan takes up the first place with its 44,000 farming households (or nearly 200,000 residents) while those of Jiaxian Traditional Chinese Date Gardens in Shaanxi and Qingtian Rice-Fish Culture System in Zhejiang include only around 1,000 residents respectively.

## 1. Task of poverty reduction at 60% of the GIAHS localities

In China, 9 of the 15 GIAHS sites are related to impoverished counties or counties with registered impoverished population. Their core areas cover 12 impoverished counties at the national level and one at the provincial level, and another three counties that have registered impoverished population. According to the statistics, 66,000 impoverished households, or 211,800 poor residents are living in the core areas of the 15 GIAHS sites. By May 2020, altogether 64,500 households, or 207,000 residents had been lifted out of poverty.

**Table 1 Impoverished counties in the core areas of China's GIAHS sites**

No.	Year of designation	Title	Counties in poverty (or with impoverished population)	Notes
1	2005	Qingtian Rice-Fish Culture System, Zhejiang	-	
2	2010	Honghe Hani Rice Terraces System, Yunnan	Honghe, Yuanyang, Jinping, Lvchun	National level
3	2010	Wannian Traditional Rice Culture System, Jiangxi	Wannian	With registered impoverished population
4	2011	Dong's Rice Fish Duck System, Guizhou	Congjiang	National level
5	2012	Pu'er Traditional Tea Agrosystem, Yunnan	Lancang, Ning'er, Zhenyuan	National level
6	2012	Aohan Dryland Farming System, Inner Mongolia	Aohan	National level
7	2013	Shaoxing Kuaijishan Ancient Chinese Torreya, Zhejiang	-	
8	2013	Xuanhua Traditional Vineyard System, Hebei	-	
9	2014	Xinghua Duotian Agrosystem, Jiangsu	-	
10	2014	Jiaxian Traditional Chinese Date Gardens, Shaanxi	Jiaxian	National level
11	2014	Fuzhou Jasmine and Tea Culture System, Fujian	-	
12	2017	Diebu Zhagana Agriculture-Forestry-Animal Husbandry Composite System,	Diebu	Provincial level

		Gansu		
13	2017	Huzhou Mulberry-Dyke & Fish-Pond System, Zhejiang	-	
14	2018	Traditional Mulberry System in Xiajin's Ancient Yellow River Course, Shandong	Xiajin	With registered impoverished population
15	2018	Rice Terraces Systems in Southern Mountainous and Hilly Areas, Jiangxi, Fujian, Hunan and Guangxi	Youxi, Xinhua, Longsheng	The first one has registered impoverished population and the other two are impoverished counties at the national level.

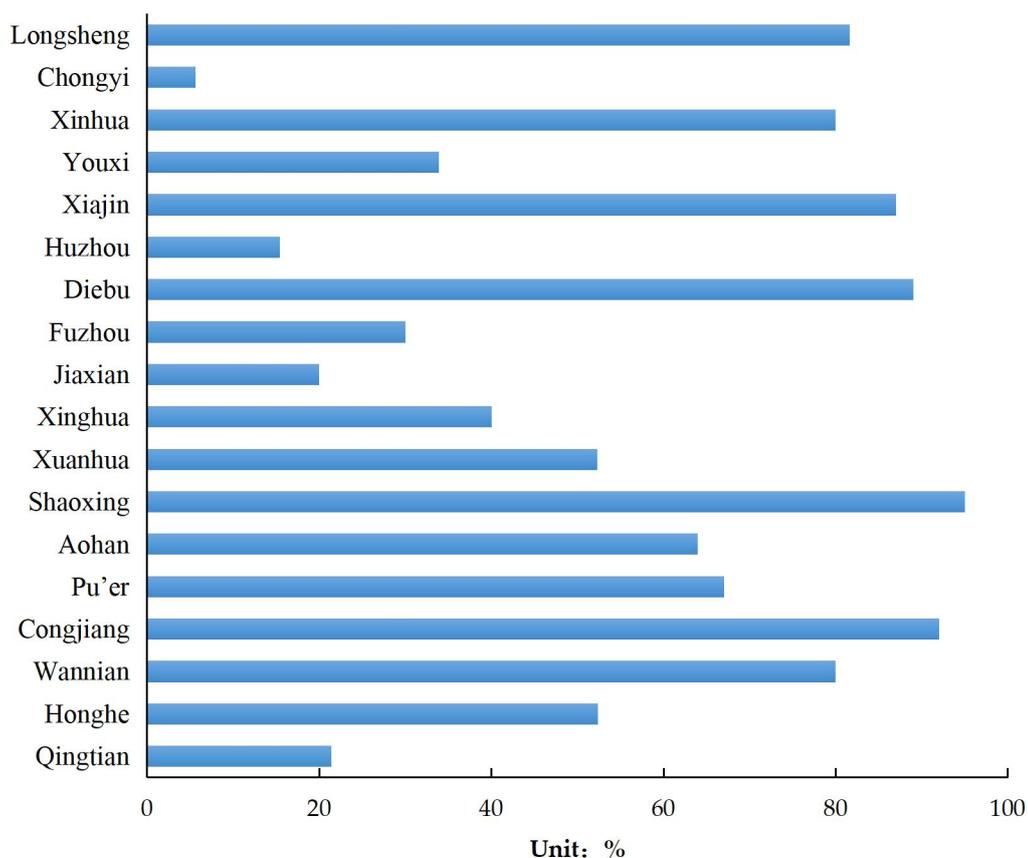
**2. Per capita disposable income of the rural residents in the provinces where GIAHS sites are located is lower than the national average level**

China's GIAHS sites are distributed in its 13 provinces, namely Hebei, Jiangsu, Zhejiang, Fujian and Shandong in the east, Jiangxi and Hunan in the central part, and Guizhou, Yunnan, Shaanxi, Gansu, Guangxi and Inner Mongolia in the west. The per capita disposable income of rural residents varies sharply between different provinces, ranging from 29,876 yuan in Zhejiang and 22,675 yuan in Jiangsu to 9,629 yuan in Gansu according to the Statistical Bulletin 2019. The average disposable income for the 13 provinces was 15,844 yuan in 2019, which was lower than the national level of 16,021 yuan. To some extent, this indicates that the GIAHS localities do not have advantages in economic development except those in the eastern region with better economic conditions.

**3. More than half of the farming households at the localities are involved in the conservation and utilization of GIAHS**

At the GIAHS localities, 56.4% of all the farming households are directly engaged in GIAHS conservation and related sectors of secondary and tertiary industries. In particular, this percentage is above 80% in Shaoxing (Zhejiang), Congjiang (Guizhou), Diebu (Gansu), Xiajin (Shandong), Longsheng (Guangxi), Wannian (Jiangxi) and Xinhua (Hunan), and above 50% in Pu'er (Yunnan), Aohan (Inner Mongolia), Honghe (Yunnan) and Xuanhua (Hebei). Job opportunities for 241,000 workers, which account for 26.5% of the total population at the localities, have been created in the core areas and major buffer zones as a result of GIAHS conservation and utilization as well as development of related industries. This shows that industrial

development based on GIAHS conservation and utilization has become an important means of livelihood for local residents.



**Figure 1 Proportion of farming households engaged in GIAHS conservation and utilization**

## II. Contribution of GIAHS sites to poverty reduction and income increase

All the GIAHS localities in the central and western regions are listed as national-level impoverished counties or counties with registered impoverished population. Most of these counties are located in hilly and mountainous areas or ecologically vulnerable areas, which not only have the ecological functions, but also serve as the ecosystems and resource base that the local residents live on.

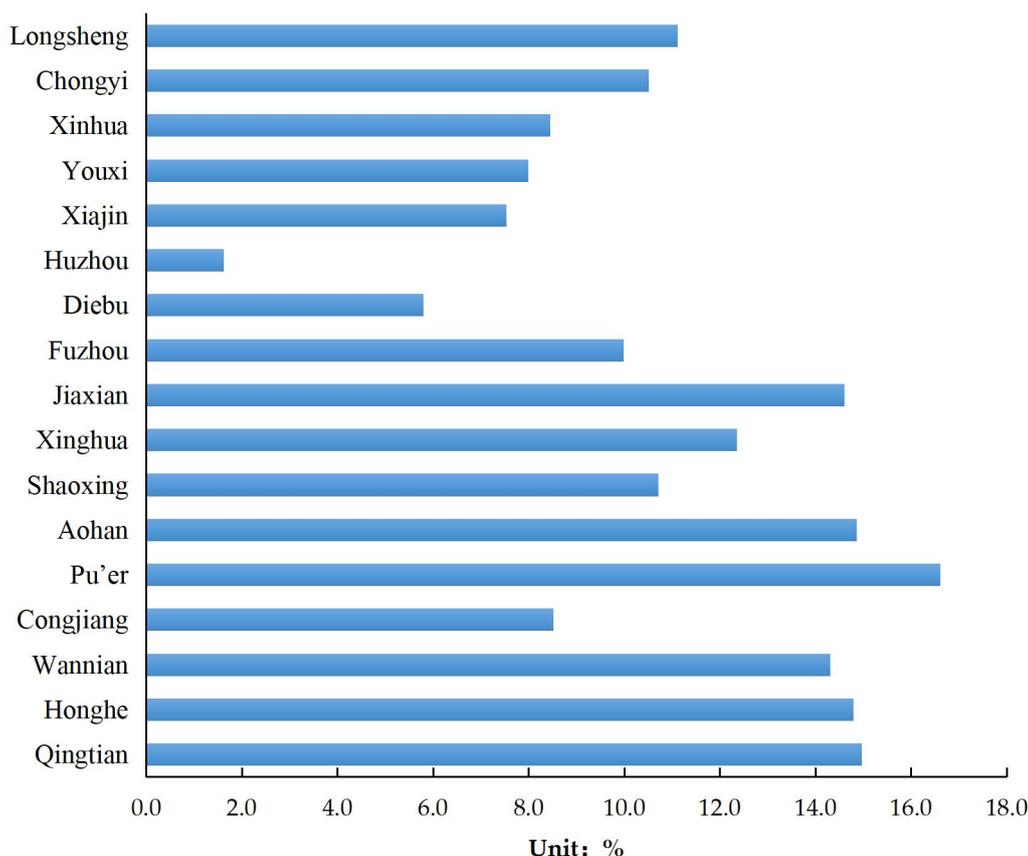
### 1. GIAHS sites have assisted the poor people at their localities in shaking off poverty and increasing income.

By the beginning of 2020, 148,700 people had been lifted out of poverty through activities for GIAHS conservation and utilization in the core areas and major buffer zones of the GIAHS sites, accounting for 71.8% of the total population who had shaken off poverty. The major approaches included providing job opportunities and

increasing the operational and assets income of the impoverished population. Aohan Banner in Inner Mongolia and Honghe Prefecture and Pu'er Prefecture in Yunnan were the top three GIAHS localities in terms of the number of poor people that had overcome poverty. The major reasons are as follows: i) these three localities have a large number of impoverished population, and the core areas of the GIAHS sites are part of the national-level impoverished counties; and ii) the activities for GIAHS conservation and utilization have increased the income sources of local residents and become an important way of poverty reduction based on industrial development.

## **2. Designation of GIAHS sites has helped the impoverished population to raise their annual average income and its growth rate.**

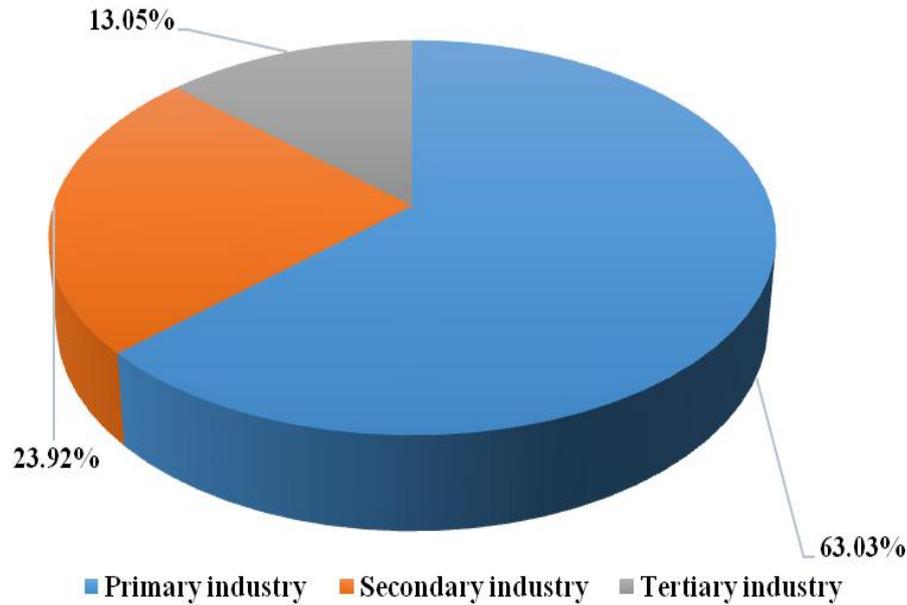
On average, the brand value of agricultural products at the GIAHS localities rises by 10%-30% due to the designation; and the direct benefits that the activities for GIAHS conservation and utilization bring for the rural residents in the core areas and major surrounding areas take up around 40% of their per capita income. Furthermore, the income of the impoverished population in the core areas and major surrounding areas grows at an annual average rate of 14.8%, higher than the rate of 10.0% for the per capita disposable income of the rural residents in the poverty-stricken areas nationwide since 2012 and the rate of 8.56% at the national level from 2015 to 2019. Among all the GIAHS localities related to impoverished counties and population, the income of the impoverished population at Xinhua in Hunan, Youxi in Fujian and Pu'er in Yunnan grows at an annual average rate of 28.5%, 23.4% and 21.0% respectively; the annual average growth rate at Aohan in Inner Mongolia and Jiaxian in Shaanxi is 18.4% and 17.5% respectively; and it is all above 10% at Honghe in Yunnan, Longsheng in Guangxi and Xiajin in Shandong. According to the local statistical bulletin, the annual average income at the localities reached 16,194 yuan in 2019, higher than the national average of 16,021 yuan and the average of 11,567 yuan in poverty-stricken areas.



**Figure 2 Contribution rate of the designation of GIAHS sites to the annual average income of poor households**

**3. Activities for GIAHS conservation and utilization have created job opportunities for a number of people who returned home.**

By the end of 2019, such activities had generated the employment of 74,000 registered poor people in the core areas and major buffer zones of GIAHS sites, who accounted for 34.9% of the total impoverished population. Focusing on GIAHS conservation and utilization, these impoverished people were mainly engaged in crop farming, livestock, primary agricultural processing, tourism, etc. Their employment rates in the primary, secondary and tertiary industries were 63.03%, 23.92% and 13.05% respectively. In recent years, a great number of young people have returned home and found jobs due to the industrial development.



**Figure 3 Distribution of impoverished population in different industries**

#### **4. The designation of GIAHS sites has boosted cultural confidence.**

As the products of the co-evolution between man and nature for thousands of years, China's agricultural heritage systems embody the philosophical concepts that came into being in ancient time, such as "harmony between man and nature" and "harvest at appropriate time" and "being very mild-tempered". They have unique technical systems for crop and animal farming, including intensive cultivation, rotation and fallow system, and material cycle, representing the most important treasure in the traditional Chinese farming culture. The Grand Chorus of Dong ethnic group, the Seasonal Production Ballads of Hani ethnic group, and the fish-lantern dance at Qingtian are all manifestations of the culture in which the ancient people endured hardship and turned disadvantages into advantages.

Thanks to the designation of GIAHS sites, on the one hand, scientific conservation and sound development of the localities have formed the virtuous cycle of industries; and on the other hand, the traditional culture at the localities has been explored and promoted to meet the increasing cultural needs of the local residents and boost their cultural confidence with vivid local stories.

### **III. Features and experience in GIAHS-based poverty reduction in China**

Since a considerable part of China's GIAHS localities are recognized as key impoverished counties at the national level, they are critical areas for the targeted

poverty reduction programme. These GIAHS sites can create synergy with the poverty reduction strategy. On the one hand, the philosophy of GIAHS sites, “conserve the heritage and promote development through its utilization”, coincides with the concepts of the poverty reduction strategy, “the Two Mountains Theory” and “conserving the unique countryside landscape and culture”; on the other hand, dynamic conservation, prosperous industries and wealth creation for farmers that GIAHS sites pursue can help to realize the fundamental objective of casting off poverty and increasing income, which is conducive to addressing the root causes of local poverty and thus constituting the GIAHS-based experience for poverty reduction of Chinese characteristics.

### **1. Increase policy support to lay a solid foundation for poverty reduction and income increase**

The local governments have strengthened the conservation and development of GIAHS sites in various ways, including issuing targeted policies, and intensify financial support. At Qingtian, Zhejiang, a three-year action plan for the development of rice-fish culture (2017-2019) was implemented. Under this action plan, a subsidy of 300-400 yuan per mu (1/15 hectare) and support for brand publicity was offered to the farmers who were engaged in rice-fish culture on a land of above 30 mu, and 3 million yuan was allocated every year as a special fund to support the conservation of stock seeds of the fish and the germplasm resources of traditional rice. At Diebu, Gansu, the infrastructure has been enhanced at the GIAHS site. Since 2017, more than 50 million yuan has been invested to build roads, observation decks, restrooms, plank roads and other infrastructure for tourism at Zhagana site and erect stelae and signboards to identify the scope and contents for the GIAHS conservation. In Fuzhou, Fujian, a Notice on Nine Measures for Supporting Development of Jasmine Tea Industry in Fuzhou was issued to reshape the image of Fuzhou Jasmine and Tea Culture System. At Youxi, Fujian, five major projects have been implemented in terms of terrace maintenance, ecological protection, infrastructure, tourism development and farming culture. A number of terrace-based projects, such as those for tourism development and smart agriculture, have been initiated. These efforts are aimed to provide concerted support.

### **2. Expand the brand influence to build the reputation for poverty reduction and income increase**

Since agricultural heritage systems have been increasingly recognized by all sectors of society, the brand effects of the agricultural products from GIAHS localities have been gradually appearing. Brand building for GIAHS sites and their products has been conducted to upgrade their social influence and industrial value chain. At Wannian, Jiangxi, the brand effect of Wannian Rice was amplified on the occasion of the 10th anniversary of the GIAHS designation. A special logo was designed and produced to promote this well-known regional brand of rice in a bid to transform the resource

advantages into industrial advantages, carry forward the history and culture, and create economic value.

At Shaoxing, Zhejiang, the common brand for Chinese Torreya planting area has been established at Shengzhou, which is located in the core area of the GIAHS site. The Chinese Torreya association has registered the trademark of “Chinese Torreya from Shengzhou”, which integrated 22 brands, accounting for over 70% of the total in this county-level city. Such a brand building practice has yielded preliminary results. This trademark has been selected as one of the famous common brands of agro-product areas in Zhejiang province, and awarded the title of products with Agro-product Geographical Indications.

### **3. Enhance the industrial development to drive the process of poverty reduction and income increase**

The local governments have been actively promoting the development of GIAHS-related industries to help the local residents get out of poverty and increase their income. First, the primary industry has been strengthened. According to the above-mentioned statistics, the primary industry is the major employer of the local residents and the basic guarantee for income increase and wealth creation. At Aohan, Inner Mongolia, dryland farming has been vigorously advocated. The planting area of millet has reached one million mu. Meanwhile, the millet straw produced in large amount has been used to feed meat donkeys. The combination of millet and donkey farming has become a model for poverty reduction. Second, the secondary industry has been extended. At Xiajin, Shandong, mulberry resources have been explored in various ways. Speciality foods and drinks and healthcare products have been developed, such as mulberry wine, dried mulberry and mulberry leaf tea. A great number of processors have been investing in this sector. At Jiaxian, Shaanxi, a modernized cold storage and a processing plant for low-temperature dried Chinese date have been built at Xishanmao, Nihegou to address the issues of storage and processing. Third, the tertiary industry has been expanded. The magnificent agricultural landscape, centuries-old history and culture and other resources have been utilized for development of recreational agriculture and rural tourism at many GIAHS localities. At Chongyi, Jiangxi, a pattern of “tourism+poverty reduction” has been adopted. The specific measures include upgrading the Shangbao terraces, enhancing the infrastructure and food service centers and renovating the guest houses. As a result, both the soft and hard environments at the site have been improved substantially. Meanwhile, good outcomes have been obtained by combining the practices of developing a stronger tourism industry and promoting ecological protection and increase in the income of impoverished population.

#### **4. Improve the benefit-sharing patterns to establish long-lasting effective mechanisms for poverty reduction and income increase**

Efforts are made to enable new-type operators, including agribusinesses, farmers' cooperatives and family farms, to take a leading role in sound benefit-sharing mechanisms, which is aimed to provide smallholders with more fruitful outcomes of GIAHS conservation and utilization. At Longsheng, Guangxi, a pattern of "company+terraces+farmer" has been developed for tourism-based poverty reduction. First, farmers can get assets income. They can become a shareholder of Longji Travel Co., Ltd. with their contracted terraces and obtain income of diversified sources, including the payment for terrace maintenance (10% of the ticket revenue of the tourist spot), farming subsidies, dividends from cable way, and returns from house renting and cooperative operation of guest houses. Second, farmers can get income from local employment. The travel company provides only tickets and meals for the tourists while the local people are responsible for accommodation, food and beverage, guiding, commodity sales, etc. That means they can find jobs at home. Third, farmers can get operational income. They can run inns and restaurants and sell souvenirs. At Xinhua, Hunan, "terrace lease" has been applied for targeted poverty reduction. The terraces of a poor farming household are leased through auction or crowd funding by one party. So far, 30 households have been supported in this way, covering leased terraces of 48.7 mu. At Xuanhua, Hebei, "grapes on traditional funnel-shape trellis" are managed by the farmers' specialized cooperatives at the villages under a one- or multiple-year contract, under which the contracting party will purchase all the products. At Congjiang, Guizhou, the benefit-sharing patterns of "company+poor farmer", "cooperative+poor farmer", and "rich farmer+poor farmer" and the integration pattern of "tourism+agriculture+poor farmer" have taken shape to bring tangible benefits to poor people in the development process of rice-fish-duck farming system.

#### **5. Increase publicity to motivate the farmers**

Publicity for GIAHS sites has been increased in various ways, such as media reports and cultural activities, at their localities to raise the public awareness, promote the recognition of local culture by the residents, boost the sense of pride, and thus motivate the farmers to participate in GIAHS conservation and utilization. At Huzhou, Zhejiang, 11 sessions of fish culture festival have been organized consecutively to showcase the Mulberry-dyke and fish-pond System. This festival has been rated as a national-level demonstration celebration of fishery culture. Meanwhile, the fish-mulberry harvest festival has been listed as one of 100 rural cultural activities of Chinese Farmers' Harvest Festival. At Honghe, Yunnan, efforts are made to conserve and carry forward the traditional farming culture. The seasonal production ballads, the polyphonic folk songs, Lezuo dance, and Jizhaishenlin sacrificial activities of the Hani ethnic minority have been included in the list of China Intangible Cultural Heritage (ICH); classical operas and dance dramas based on Hani terraces have been

put on stage; and a series of books on terrace culture have been published. Such multifaceted promotion activities have made the local people feel proud of their culture, which helps to win the fight against poverty. At Xinghua, Jiangsu, publicity for Duotian agrosystem has been increased through media and related activities. A promotional video on this agrosystem was produced and thematic programmes were broadcast on the former channel for agriculture of China Central Television (CCTV-7). The fifth session of a TV show for high-quality agricultural products was held under the auspices of CCTV-7 in Xinghua, which offered an opportunity to demonstrate the wisdom of this agrosystem. In addition, a GIAHS stand is set up at domestic and international trade fairs and exhibitions for agricultural products to promote the specialities from this agrosystem.

#### **6. Take advantage of the digital dividend to increase effective ways for poverty reduction and income increase**

The outbreak of COVID-19 has made a huge impact on China's economic development. Nonetheless, strong resilience has been shown at the GIAHS localities in face of such a severe challenge. The GIAHS and ICH have been showcased through various channels, including live commerce and online videos and exhibitions. On the day when the ICH shopping festival was launched at taobao.com, jd.com and other e-commerce platforms, over 3 million orders were placed for ICH products, achieving a sales volume of over 8 million<sup>1</sup>. More than 1,600 videos and documentaries about ICH were broadcast free of charge at 8 online video platforms, including v.qq.com and iqiyi.com. This led to the release of 80, 000 videos related to ICH by farmers and other net-users and a view count of 870 million for the ICH section of all the platforms. All these activities have contributed to the sales of products and the increase of farmers' income at the GIAHS localities.

#### **IV. Problems and countermeasures in terms of GIAHS-based poverty reduction**

Activities for GIAHS conservation and utilization have achieved remarkable results in helping farmers shake off poverty and increase their income. However, many difficulties and problems remain, which requires more support be provided to consolidate the outcomes and innovative approaches to GIAHS conservation and utilization be adopted to sustain the income increase.

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<sup>1</sup>Expert Advisory Committee on Agricultural and Rural Informatization. Report on Rural Digitalization in China (2020). Nov. 2020.

## **1. Major difficulties and problems**

### **(1) Support for GIAHS conservation and utilization is insufficient.**

China issued the Measures for GIAHS Management and put forward the principle of "dynamic conservation, coordinated development, multi-stakeholder participation and benefit sharing" in 2015. However, the current conservation practices are still dominated by farmers and local governments, with insufficient participation of communities, enterprises, social organizations and research institutions. More efforts are required to form the collaboration mechanism and explore the multi-stakeholder participation mechanism. At the same time, priority has been given to economic and social development rather than GIAHS conservation at some localities in order to advance the urbanization process and meet the needs of transportation construction, tourism development and urban expansion. Therefore, how to further promote the synergy between the development and conservation of GIAHS localities is an issue that needs to be solved in the future.

### **(2) The industrial chain needs to be better integrated and the industries need to play a bigger role.**

Currently, the primary industry is playing a leading role in terms of GIAHS exploration and utilization. It is the major channel to create opportunities for poor households and provide jobs to farmers. At present, the main problem is major operators, i.e. farmers, enterprises and cooperatives, are less capable; and the integration of the three industries is less satisfactory, weakening their catalytic role in the local economic development. Small-scale and individual operations have been predominant in the primary industry, which means its overall development needs to be upgraded. As for the secondary industry, the production value of the agro-processing sector has taken up a small proportion in the total and the enterprises are generally small-sized, resulting in less influence for the farmers. In terms of the tertiary industry, recreational agriculture and rural tourism has been flourishing. However, a lot of issues need to be addressed, such as insufficient reception capacity, short stay of tourists due to the tourism development based on seasonal sightseeing, lack of in-depth exploration of farming practices, traditional food and farming culture, and possible disturbance to the local ecosystems by excessive tourists during the high season.

### **(3) The benefit-sharing mechanisms need to be improved and the farmers have limited ways to participate in GIAHS conservation and utilization.**

Farmers participate in poverty reduction activities mainly through engaging in related industries, providing labour service and selling souvenirs. The landscape resources, farming settings and traditional dwellings of farmers have not been transformed into assets, which can underpin long-term benefit-sharing. The industrial and commercial

capital is often more powerful in the development and utilization of GIAHS resources while the farmers are constrained by their weak operations and lower level of organization, putting themselves in a vulnerable position in the industrial chain.

**(4) More support is required in terms of R & D and human resources.**

As a compound system, agricultural heritage systems require multi-disciplinary research. A great amount of R & D activities need to be conducted to address major scientific issues and the S & T weaknesses in industrial development, including biodiversity maintenance mechanisms, landscape stabilization mechanisms, scientific and technological systems to support the conservation and development, facilitation mechanisms for industrial development, and methods and systems for surveillance and assessment of the heritage systems. The participation of universities and research institutions at the localities is not sufficient to train qualified managerial and research personnel for the heritage systems.

**(5) Exploration of the potential of GIAHS sites need to be improved.**

Due to the priority level, consciousness, operation philosophy, management competence and some other factors, many problems remain to be solved at the GIAHS localities: the advantages in biological, landscape and cultural resources have not been fully transformed into the driving force for economic development; the overall planning, image building, marketing and operations management of GIAHS resources need to be improved; and the advantages of the featured products and the GIAHS resources as a whole have not been fully explored.

In addition, the marketing of agricultural products from some GIAHS localities have been hindered because of the COVID-19 outbreaks. In particular, recreational agriculture and rural tourism have been brought into a standstill in many areas, which has affected farmers' income to varying degrees.

## **2. Recommendations**

### **1. Build the capacity of officials in terms of GIAHS utilization and management at poverty-stricken localities**

Efforts should be made to strengthen the training for officials and staff members who are engaged in GIAHS conservation and utilization in the field to improve their management competence. On the basis of conserving traditional cultural elements, the landscape and other resources of GIAHS sites should be upgraded and designed by introducing advanced concepts, management teams and designers to increase their market value. Guidance should be offered for establishing an entrepreneurship fund, which can enable the family farms, cooperatives and enterprises to be rewarded for

helping poor people get out of poverty with GIAHS resources, and also provide loans and other financial support to poor people who set up businesses based on GIAHS resources.

## **2. Intensify the efforts to explore and support the agricultural heritage systems in less-developed areas**

Local authorities should be encouraged to carry out regional surveys of agricultural heritage systems and apply for the GIAHS designation. Priority should be given to the designation of such sites in less developed areas. Efforts should be made to obtain a special fund from the national finance for the agricultural heritage systems in less developed areas, and expand various channels to attract non-government capital investment, and increase the financial transfer payment to their localities to improve the infrastructure, such as roads and communication system.

## **3. Increase the ways for poor people to participate in GIAHS conservation and utilization and improve the benefit-sharing mechanisms**

The biological, landscape and cultural resources of GIAHS sites should be further explored to foster and extend the industrial chain. Various measures can be adopted, such as enabling farmers to invest with their land, houses and collective land for operational activities, giving full play to the social, economic, cultural and ecological values of GIAHS sites, promoting the integrated development of primary, secondary and tertiary industries in rural areas, expanding the channels for increasing farmers' income, and leveraging the catalytic role of GIAHS sites in terms of income increase. Appropriate compensation should be given to the landscape creators when the public landscape of GIAHS sites is developed as a tourist spot with industrial and commercial capital. Meanwhile, the "five-in-one" multi-stakeholder participation mechanism, which involves governments, research institutions, enterprises, communities (farmers) and social sectors, needs to be further improved in order to lay a more solid institutional foundation for the GIAHS conservation activities.

## **4. Facilitate scientific research and development of human resources**

Efforts should be made to encourage interdisciplinary comprehensive research and stimulate the universities and research institutions at GIAHS localities to join the research teams for agricultural heritage systems so as to strengthen the scientific research in sustainable mechanism, technical support, industrial development, and surveillance and assessment. GIAHS research and demonstration bases should be built to advance the application of research results at the GIAHS sites, where priority should be given to the development of research and learning bases. Undergraduate courses and graduate programmes can be set up to train more GIAHS professionals and experts.

## **5. Boost publicity and promotion for GIAHS sites to increase the knowledge of all social sectors about their conservation and development**

Scientific knowledge about GIAHS should be popularized to avoid incorrect concepts of putting utilization before conservation and enclosed conservation. Publicity and promotion for GIAHS sites can be enhanced through activities such as farmers' harvest festival, agriculture exposition and trade fair, as well as channels like television, newspaper and new media, so as to raise the awareness of GIAHS sites and highlight the benefits of their common brand.