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Research on Mulberry-dyke & Fish-pond Agricultural Heritage Protection Based on the Concept of Rural Environmental Museum —Case Study on Digang Village in Huzhou City, Zhejiang Province

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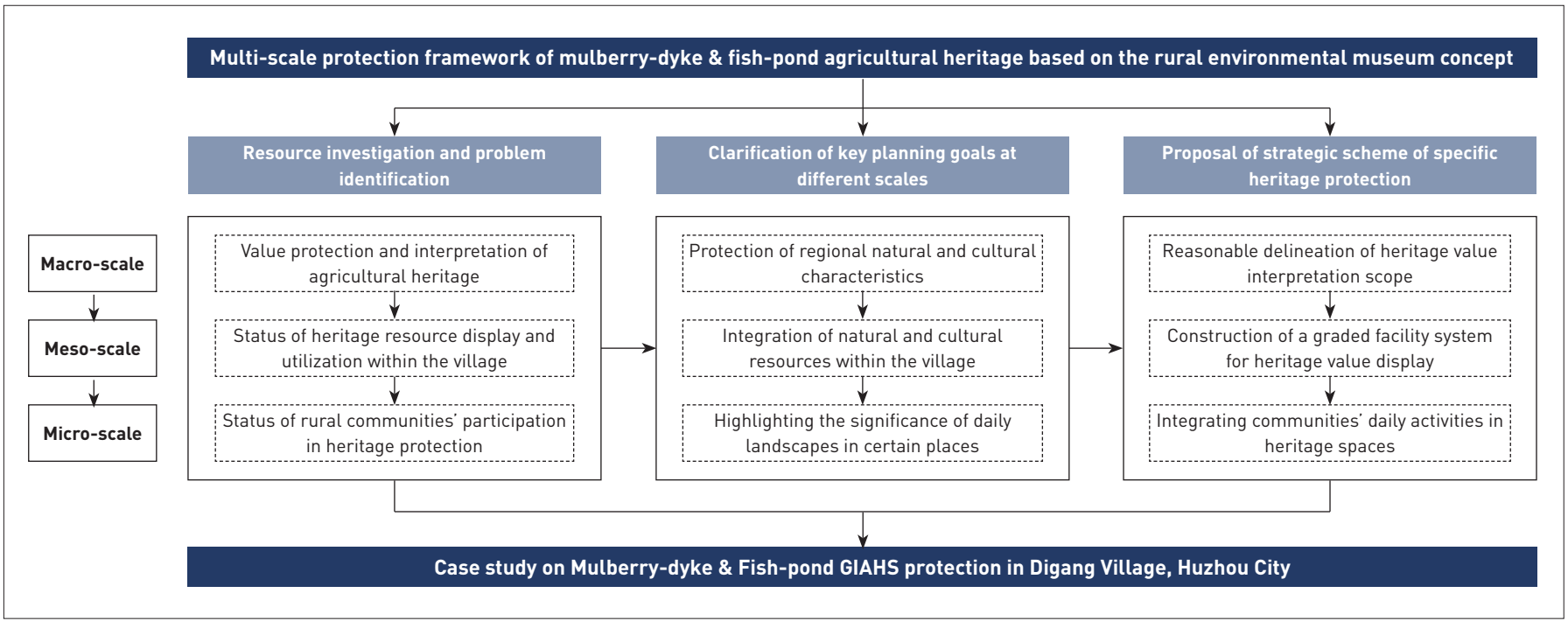
GRAPHICAL ABSTRACT



HIGHLIGHTS

- Theoretically established a generally applicable framework for the protection of Mulberry-dyke & Fish-pond GIAHS
- Verified the practicality and effectiveness of this framework in protecting GIAHS in China
- Explored a methodology suitable for the connection between value interpretation and spatial planning of GIAHS in China, while expanding the application breadth and depth of the protection paradigm

KEYWORDS

Globally Important Agricultural Heritage System (GIAHS); Rural Environmental Museum; Digang Village; Mulberry-dyke & Fish-pond System; Heritage Protection; Agricultural Landscape

ABSTRACT

Since the initiation in 2002, the Globally Important Agricultural Heritage Systems (GIAHS) have attracted widespread attention from the international heritage community. Although the total number of GIAHS projects in China has ranked among the top in the world, most of these heritage sites still face challenges of insufficient value interpretation and presentation, as well as unsustainable protection and utilization. This research draws on the concept of rural environmental museum to establish a multi-scale protection framework for Mulberry-dyke & Fish-pond GIAHS. Taking the mulberry-dyke & fish-pond agricultural heritage in Digang Village of Huzhou City in Zhejiang Province as an example, layered protection strategies were proposed considering its current status. At the macro-scale, delineate the heritage interpretation scope according to the refined regional cultural identity; at the meso-scale, build a graded facility system for heritage value display according to the determined display sequence; at the micro-scale, enhance the sense of place in daily landscapes and integrate daily community activities into heritage spaces. This path from heritage value interpretation to spatial planning can provide reference for related protection practice of other GIAHS projects.

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1 Introduction

In 2002, the Food and Agriculture Organization (FAO) of the United Nations initiated a global partnership initiative in Johannesburg, South Africa, launching the Globally Important Agricultural Heritage Systems (GIAHS) project, which aims to protect representative traditional agricultural systems in all countries[1]. This project focuses on unique land use systems and agricultural landscapes in rural areas formed through long-term co-evolution and dynamic adaptation between human and nature[2], nominating heritage sites with significant living characteristics. Being continuously refined, the GIAHS list has covered diverse production systems including agriculture, forestry, animal husbandry, and fishery. Currently, impacts of climate change, urbanization, and excessive tourism development have also imposed challenges on GIAHS, calling for a broader recognition and more effective protection actions to spread and develop their value.[3]

GIAHS are picturesque sustainable landscape systems arising from the community's long-term adaptation to the environment, which incorporate agricultural biodiversity, resilient ecosystems, and valuable cultural heritage[4]. Upon the initiation of the GIAHS project, FAO began to evaluate typical traditional agricultural systems globally[5]. By the end of 2023, 86 GIAHS sites in 26 countries have been designated, covering agricultural landscapes, integrated systems, and species resources[6]. Among the 57 GIAHS sites in the Asia-Pacific region, China has 22, highlighting its rich traditional knowledge, technology, and intelligence for agricultural ecosystems accumulated in its long history. Meanwhile, GIAHS have been increasingly recognized across the globe as a treasure trove for sustaining bio-cultural diversity, due to their value in addressing climate change, ensuring food and livelihood security, building resilient communities, and supporting biodiversity[7]. Huzhou Mulberry-dyke & Fish-pond System in Zhejiang Province was designated as a GIAHS site in 2017. However, the protection of this system still faces a series of challenges. It is urgent to clarify the priorities and implementation paths at multiple scales to clearly interpret and demonstrate its heritage significance, thus finally achieving sustainable protection, inheritance, and active utilization of it.

In recent years, scholars have had an in-depth exploration and introduction of the "rural environmental museum" concept[8].

Unlike traditional museums that simply display collections, this concept treats the entire rural area as a "museum." It can display historical and cultural identities, disseminate resource information, and achieve regional revitalization and resurgence[9] by protecting and utilizing both tangible and intangible resources formed through the interaction between human and nature. The rural environmental museum system has played a prominent role in protecting rural landscapes and traditional agricultural facilities[8]. However, it is still underused in GIAHS protection. Thus, with this concept, this research explores and practically verifies a protection framework suitable for the mulberry-dyke & fish-pond agricultural heritage in Huzhou City, in order to supplement its application on GIAHS.

2 Overview of the Mulberry-dyke & Fish-pond Agricultural Heritage in Huzhou

2.1 Evaluation Criteria for GIAHS Projects

There are mainly five criteria for FAO to designate GIAHS: food and livelihood security; agro-biodiversity; local and traditional knowledge systems; cultures, value systems and social organizations; and landscape and seascape features[10]. Although similar to the World Cultural Heritage as evolving cultural landscapes, the selection for GIAHS is quite different: a GIAHS site must meet all the five criteria simultaneously. These criteria for GIAHS are interrelated, connecting the tangible and intangible, heritage and community, and nature and culture which together constitute the core value of GIAHS as a living and continuously evolving anthropogenic complex ecosystem, i.e., harmonious coexistence of human and nature.

2.2 Characteristics of the Mulberry-dyke & Fish-pond Agricultural Heritage in Huzhou

The mulberry-dyke & fish-pond agricultural heritage in Huzhou is one of the most concentrated, intact, and largest existing dyke-pond system in China. Its core protection area is located in Linghu Town and Hefu Town of Nanxun District, to the south of Taihu Lake in the Yangtze River Delta, covering a total area of 6,900 hectares[11]. The mulberry-dyke & fish-pond system originated around 2,500 years ago in the Spring and Autumn and Warring States periods; since then generations of residents have developed an agricultural ecosystem adaptable to the wetland environment. Up to now, the region still preserves nearly 4,000 hectares of mulberry gardens and 10,000 hectares of fish ponds[12]. Designated as GIAHS, Huzhou Mulberry-dyke & Fish-pond System is an eco-agricultural system integrating several agricultural production modes working in symbiosis (Table 1)[12].

3 Building a Protection System for Agricultural Heritage Based on the Concept of Rural Environmental Museum

3.1 Concept of Rural Environmental Museum

The concept of rural environmental museum originated from "ecological museum." The latter refers to an approach to sustainably realizing the integral protection and utilization of cultural heritage, social milieu, and ecological environment within a certain geographic area, supported by local participation and oriented by the regional characteristics[13][14]. The ultimate goal is to achieve the integrated development of heritage and community[9]. First proposed in France in 1972, ecological museum has been widely recognized in museum construction practices around the world over the past 50 years, generating a new paradigm of heritage protection. It emphasizes the *in-situ* protection of natural and cultural heritage[15], advocates heritage protection and display in a broad natural environment. In this type of protection which emphasizes connections between heritage and historical culture, natural resources, ecological zones, and agricultural practices, communities become the core agent of the ecological museum[16] to carry out the best strategies for understanding and interpreting localities[17][18]. On this basis, in December 1998, the Ministry of Agriculture, Forestry and Fisheries of Japan proposed the Rural Environmental Museum Plan[19], which helped establish a localized implementation path of ecological museum, refine the action framework and steps for heritage protection and community development in rural areas, and finally form a set of guidelines for the practice of ecological museum. This marked the first proposal of the rural environmental museum concept.

This concept includes three types of elements: core facilities, satellite facilities, and exploration routes, focusing on water, soil, and settlements[8]. The rural environmental museum is not about simply connecting resources through linear paths; instead, it regards the whole rural area as a museum, integrating resources at all scales by flexibly organizing regional geographical characteristics. Its open-air nature enables the presentation of village and agricultural heritage as a whole, aiming to achieve their synergistic development[20]. Up to now, Japan has established 56 rural environmental museums[8] and generated its own adaptive methods and implementation paths for rural revitalization and heritage protection.

Table 1: Evaluation on agricultural cultural heritage of the mulberry-dyke & fish-pond in Huzhou City

Evaluation criteria for GIAHS	Specific situation
Food and livelihood security	The mulberry-dyke & fish-pond system serves as the main source of household income in heritage areas, offering continuous job opportunities for local rural families and providing abundant, ecological, safe, and high-quality agricultural products
Agro-biodiversity	The mulberry-dyke & fish-pond system promotes biodiversity and ecological service functions; it not only maintains the diversity of genetic resources of specific plant and animal species, but also achieves "zero" environmental pollution, flood regulation and storage, and regional microclimate adjustment
Local and traditional knowledge systems	Residents in the heritage area realize sustainable development of local ecosystem via proficient breeding, grafting, cultivation, and management techniques of mulberry trees, sericulture, traditional silk reeling, and textile techniques, as well as three-dimensional ecological fish farming techniques; meanwhile, they develop lowland water conservancy projects and pond water quality control techniques to reduce the impact of disasters on the area and maintain the ecological balance and good water quality
Cultures, value systems and social organizations	The agricultural production featured with mulberry-dyke & fish-pond system breed sericulture culture and silk textile techniques, as well as related intangible cultural heritage, significantly disseminating the heritage of Silk Roads
Landscape and seascape features	Mulberry gardens and fish ponds are interconnected with and reinforced each other, forming the mulberry-dyke & fish-pond landscape; for thousands of years, local residents have constructed the drainage and irrigation systems to manage water resources for drought prevention, soil improvement, and flood control

3.2 Advantages of Rural Environmental Museum as a GIAHS Protection Paradigm

Since 1995, China has started ecological museum practices in rural areas[15] for ethnic villages and agricultural heritage sites[21], deriving many schemes such as ethnic village ecological museums[22], neighborhood museums, and community museums[13]. However, most of these practices are spontaneous explorations by local stakeholders, without a unified action framework for wide application. Moreover, most of these ecological museums place emphasis on tourism development rather than the connection with locals' daily life, failing to engage communities in heritage conservation. Therefore, based on the rural environmental museum paradigm, an implementation framework suitable for China's agricultural heritage protection will greatly promote the establishment of protection methodology for GIAHS in China.

Generally, the GIAHS protection framework on the basis of the rural environmental museum paradigm differs from the traditional ones in scope demarcation, subjects, key elements, methods, and display modes (Table 2)①, with its advantages mainly reflected in three aspects. First, it respects temporal and spatial characteristics of the site, emphasizing the systematic interpretation and comprehensive protection of historical, natural, cultural, and industrial resources. Second, it emphasizes dynamic presentation of historical development, rather than the isolated presentation of historical segments, realizing an "authentic" and "integral" display of GIAHS which are gradually disappearing or endangered.

① Characteristics of the traditional protection paradigm are summarized from the Law of the People's Republic of China on the Protection of Cultural Relics (2017 Amendment), Law of the People's Republic of China on Intangible Cultural Heritage (2011), Regulations on the Protection of Famous Historical and Cultural Cities, Towns, and Villages, Requirements for the Preparation of Protection Planning for Famous Historical and Cultural Cities, Towns, and Villages (Trial), Basic Requirements for the Preparation of Protection and Development Planning for Traditional Villages (Trial), and other related standard documents. Characteristics of the rural environmental museum paradigm are summarized from the documents of the Ministry of Agriculture, Forestry and Fisheries of Japan and Refs. [8][9][19].

Table 2: Comparison of traditional protection paradigm and the rural environmental museum protection paradigm

Protection paradigm	Demarcation	Subject	Key element	Method	Display mode
Traditional	Based on the scope of the agricultural production system or the range of the village	Experts and local government	Traditional agricultural production systems, historic sites, protection units of cultural relics, intangible cultural heritage, etc.	Cultural relic protection, static protection	Tourism resource and tourist product display primarily to tourists
Rural environmental museum	Including living, production, and ecological spaces that fully demonstrate the heritage value together	Multiple stakeholders, primarily by local communities	All elements conducive to enhancing functions of the interaction system between human and nature	Integral protection, dynamic protection	Localized display integrated into daily life and production of local communities to both residents and tourists

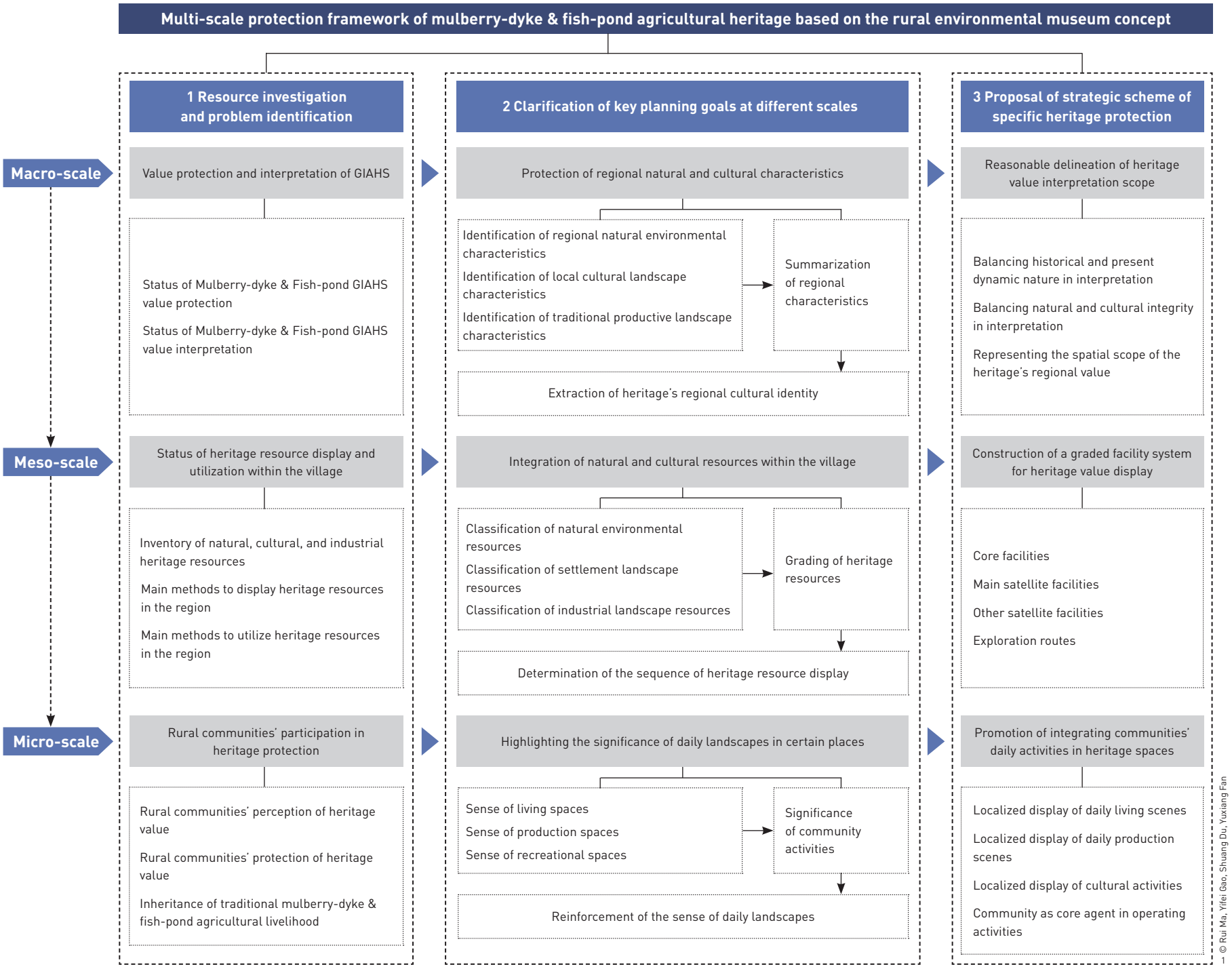
Third, community participation in agricultural production and heritage maintenance is key to the survival of GIAHS, because this determines how to organize and redefine local features, thus to better attach locality to related facilities and combine the rural communities' daily life and production activities with the heritage.

3.3 Protection Framework Establishment for the Mulberry-dyke & Fish-pond GIAHS Based on Rural Environmental Museum Concept

On the basis of the concept of rural environmental museum and the evaluation criteria of Huzhou Mulberry-dyke & Fish-pond GIAHS, a protection implementation framework for this heritage is established (Fig. 1). The entire framework includes three stages covering macro-, meso-, and micro-scales. The first stage is resource investigation and problem identification. The second stage clarifies key planning goals at different scales: at the macro-scale, understanding the regional natural and cultural characteristics in a broader spatio-temporal background, and refining the regional cultural identity of the heritage; at the meso-scale, integrating natural and cultural resources within the village territory according to the regional cultural identity, and setting up the display sequence of heritage resources; and at the micro-scale, organizing and guiding community activities in living, production, and recreational places, to strengthen the sense of place in daily landscapes. The third stage proposes a strategic scheme of specific heritage protection, including delineating the scope of heritage value interpretation, constructing a graded system for value display, and integrating community daily activities into heritage spaces. Centering on community participation, the entire protection framework responds to existing problems at multiple scales and levels, to achieve dynamic protection and development of the mulberry-dyke & fish-pond agricultural heritage.

4 Case Study: Mulberry-dyke & Fish-pond GIAHS Protection in Digang Village Under the Rural Environmental Museum Concept

The case study area is part of Digang Village in Hefu Town of Huzhou, located at the intersection of the ancient channel of the Grand Canal, the core protection area of Huzhou Mulberry-dyke & Fish-pond system, and the nationally recognized Famous Historical and Cultural Village of Digang. The village is a typical lake–polder settlement covering an area of 6.3 km^2, with more than 1,000 households and a total population of around 4,000[23]. Within the village, the protection area of the mulberry-dyke & fish-pond heritage covers 66.7 hectares[24], retaining the traditional agricultural ecosystem and production mode. Through field investigation on the natural and cultural resources of Digang Village, the agricultural heritage protection status, as well as in-depth interviews with the villagers, the research team summarized the current situation into three aspects: protection and interpretation of the heritage value, display and utilization of heritage resources, and rural community participation in heritage maintenance. The identified problems are listed as follows.



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1. Implementation framework for multi-scale protection of the mulberry-dyke & fish-pond agricultural heritage.

4.1 Incomplete Protection Scope Against Integral Heritage Value Interpretation

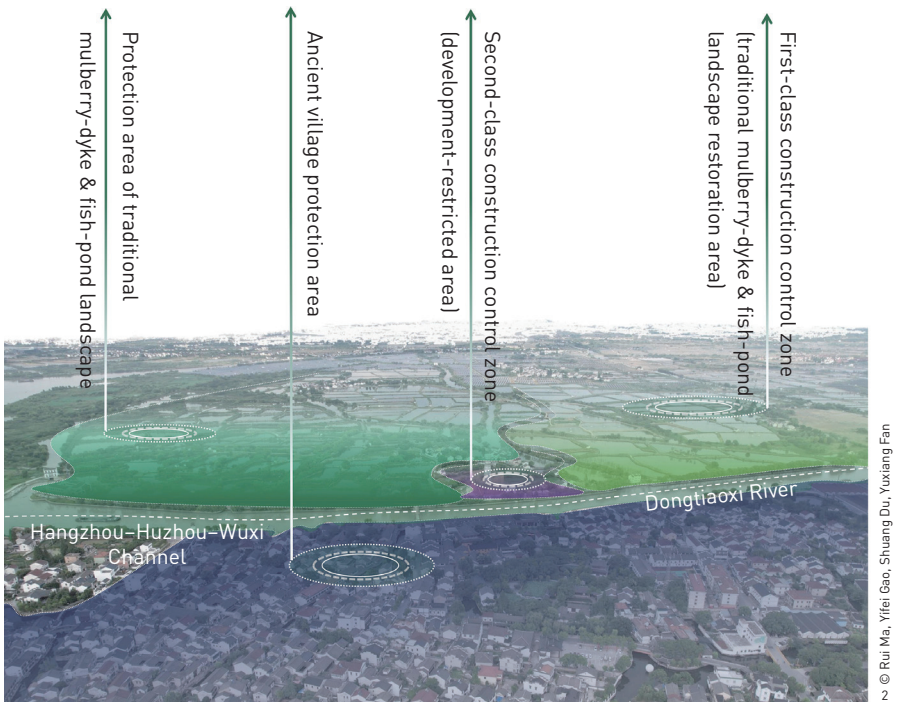
Digang Village has delineated different scopes for protection as being the nationally recognized famous Historical and Cultural Village and GIAHS (Fig. 2): 1) delineating the ancient village protection area and the mulberry-dyke & fish-pond protection area according to the Protection Plan for Digang Village as Famous Historical and Cultural Village (2011–2020); 2) further subdividing the mulberry-dyke & fish-pond protection area in Digang Village into protection area of traditional landscape, first-class construction control zone (traditional landscape restoration area), and second-class construction control zone (development-restricted area)

according to the Nanxun Mulberry-dyke & Fish-pond Protection Plan (2022–2035)[23]. Like "frozen preservation" or "isolated protection" of historical relics, these measures undoubtedly sever the relationship between the agricultural heritage and the regional natural and cultural environments, thereby impacting the integral value interpretation of the mulberry-dyke & fish-pond. As outlined in the Guidelines for Making a GIAHS Proposal Documents, this narrow understanding of the complexity and connectivity of GIAHS landscape and its surrounding environment may lead to an incomplete cognition of GIAHS and limit future protection activities within a very narrow scope.[10]

4.2 Non-narrative Resource Display Leading to Weak Public Perception of Heritage Value

Field investigation revealed that most existing resources of natural environment, settlement landscape heritage, and industrial landscape heritage were separately displayed in traditional museums, indoor exhibition halls, or scattered in historical buildings and relics. Such non-narrative display weakened the historical, cultural, and local value of the heritage. Those intangible cultural resources were mainly displayed in facilities like the Chinese Brush Exhibition Hall, Research Institute for Fish and Mulberry Culture, Fishbone Painting Studio, and festival square in Digang Fishing Resort, most of which were primarily used by study tour groups with weak connection with the daily activities of local residents. Moreover, the resource utilization patterns were relatively monotonous—there were only eco-tourism, cultural study tours of intangible heritage, and culinary experiences confined in Digang Fishing Resort, Lixiang Dam, Waixiang Dam, Baisang Mulberry Garden, and Shell Bay. There is a lack of in-depth experience to the mulberry-dyke & fish-pond agricultural heritage and other historical heritage in the village (Table 3).

Under the non-narrative display mode, the public can hardly perceive the value of heritage, nor can villagers enhance their cultural identity. Interviews with tourists to Digang Village revealed that over 90% of them were not familiar with the Mulberry-dyke & Fish-pond GIAHS, and their tourism purposes were mainly local culinary experience and spending weekends in Digang Fishing Resort. Research also showed that less than 2% of tourists knew that the Huzhou Mulberry-dyke & Fish-pond System is a GIAHS site[12]. Therefore, the key to heritage protection lies in the systematical display and comprehensive utilization, by which its value can be better recognized and the heritage can better interact with the local community.



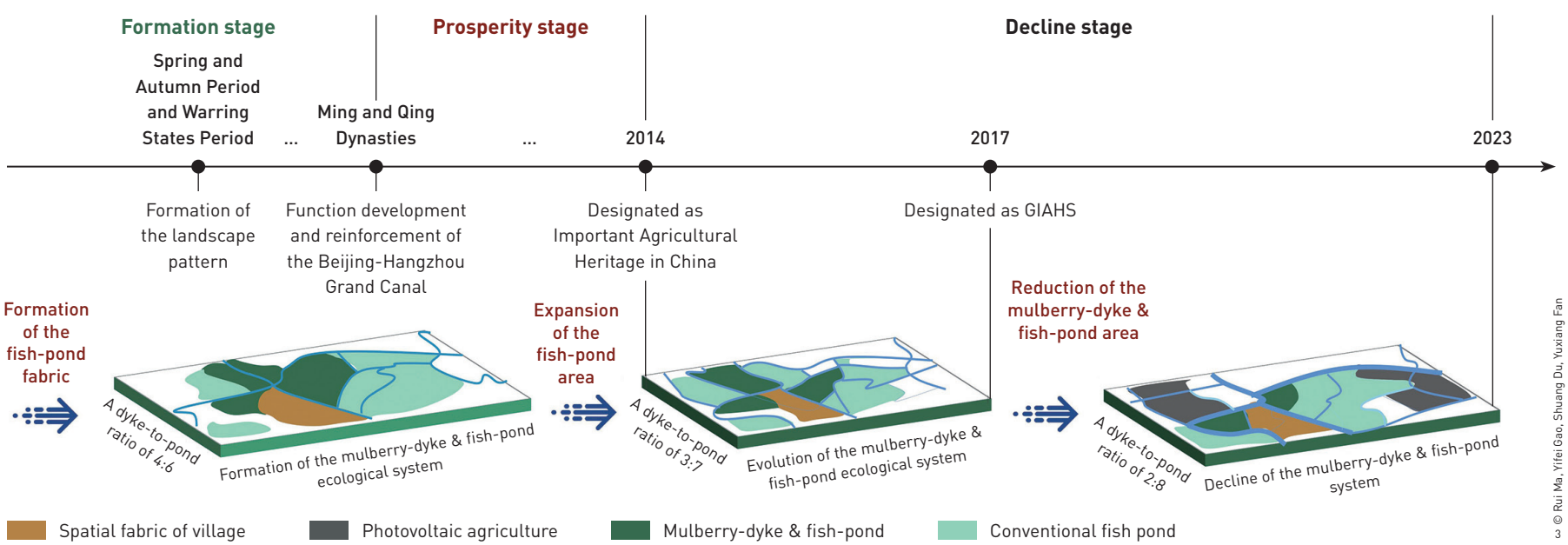
2. Existing heritage protection area.

4.3 Changing Agents of Heritage Maintenance Leading to Decline of Mulberry-dyke & Fish-pond Agricultural Ecosystem

In recent years, the mulberry-dyke & fish-pond system has performed worse economically[25], thus changed livelihood patterns of local community residents: some migrate to towns, and some shift the compound farming via mulberry-dyke & fish-pond system to monoculture via fish ponds, leading to area reduction of the system[26]. The decline of silk trade, changes in livelihood, and the loss of a large number of sericulture farmers have become major threats to the sustainability of the Mulberry-dyke & Fish-pond GIAHS. As shown in Fig. 3, although being recognized as Important Agricultural Heritage in China in 2014 and GIAHS in 2017, only the core protection area of Huzhou Mulberry-dyke & Fish-pond System maintains a dyke-to-pond ratio of 3:7[27], while the peripheral area has been largely replaced by photovoltaic agriculture and common fish ponds, with a dyke-to-pond ratio of 2:8 or even lower. The withdrawal of local residents in daily maintenance of the mulberry-dyke & fish-pond agricultural ecosystem resulted in the village collective's passive role in heritage maintenance. Although the landscape characteristics of the core protection area were preserved, it is difficult to prevent the decline of the ecosystem function as a whole. As a result, at the village scale, the changed

Table 3: Display and utilization of heritage resources in Digang Village

Heritage resource category	Included elements	Display status	Utilization status
Natural environment resources	River, port, wetland, pond	No demonstration or explanation	Channel function declines and pond area decreases due to land reclamation
Settlement landscape heritage resources	Tangible cultural elements	The movable cultural relics are mainly displayed in traditional museums; immovable historic buildings and relics, and cultural relic protection units are displayed as independent points; other tangible elements are not displayed	Resource development is spatially concentrated in Lixiang Dam and Waixiang Dam
	Intangible cultural elements	Mainly displayed in certain places such as Chinese brush exhibition hall, Research Institute for Fish and Mulberry Culture, Fishbone Painting Studio, and festival square in Digang Fishing Resort	Fishing Culture Festival and local cuisine are highlighted; educational tourism for adolescents are developed
Industrial landscape heritage resources	Drainage and irrigation systems, waterway and other water transportation facilities, and mulberry-dyke & fish-pond agricultural ecosystem	Protection-oriented, lack of systematic display	Ecological sightseeing is arranged around the Baisang Mulberry Garden and the Shell Bay
	Traditional knowledge and techniques for agricultural production	Only displayed and interpreted at the Research Institute for Fish and Mulberry Culture in Digang Fishing Resort	The core area of the mulberry-dyke & fish-pond system retains traditional knowledge and techniques for agricultural production, but does not fully or well explore or utilize them



3. Historical evolution of the mulberry-dyke & fish-pond agricultural landscape.

dyke-to-pond ratio and the declined agricultural ecosystem have caused the poor nutrient exchange and energy flow between water and land[25], and the use of chemical fertilizer and fish medicine also disturbs the ecological balance[28] and reduces biodiversity.

5 Protection Strategies for the Mulberry-dyke & Fish-pond GIAHS in Digang Village Based on Rural Environmental Museum Concept

Given the problems above, this research proposes heritage protection strategies for the GIAHS in Digang Village, with specific planning goals proposed from the multi-scale protection implementation framework[29]. These strategies aim to propose regional cultural identity of the heritage, determine the display sequence of village heritage resources, and strengthen the sense of place in daily landscape through investigation, preservation, interpretation, display, and active utilization of this GIAHS.

5.1 Macro: Regional Scale

5.1.1 Summarizing Natural and Cultural Characteristics, Refining the Regional Cultural Identity of Heritage

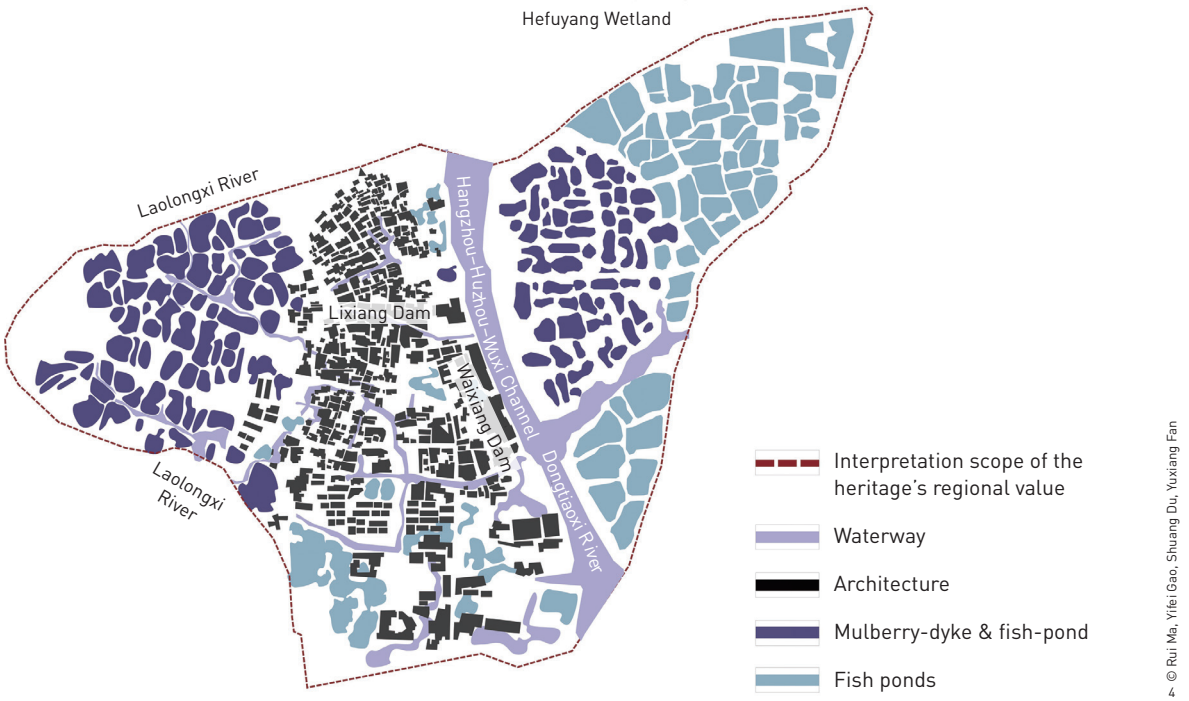
Spatially, Digang Village features a wetland environment with numerous rivers, ports, and ponds due to its location in the central lowland plain area of the Hangzhou–Jiaxing–Huzhou region[30]. Historically, development of the mulberry-dyke & fish-pond agricultural heritage here was closely associated with the rise and fall of the Husi (silk produced in Huzhou) trade.[30][31] Some scholars believe that Huzhou Mulberry-dyke & Fish-pond System has a history of over 2,500 years. As early as the Spring and Autumn and Warring States periods, residents in this region had started digging ponds and building dikes to form the mulberry-dyke & fish-pond ecological production and construct a unique lowland agricultural recycle: sericulture by mulberry leaves, fish farming with silkworm manure, and mulberry cultivation with pond mud.[12][32] During the Ming Dynasty (1368–1644) and Qing Dynasty (1636–1912) when the Husi trade boomed, the Huzhou Mulberry-dyke & Fish-pond System gradually expanded and prospered, making Huzhou one of the most developed sericultural areas in China. According to *Supplementary to the Book on Agriculture* written by Lvxiang Zhang in the late Ming Dynasty and early Qing Dynasty, the mulberry-dyke & fish-pond system had become a main agricultural mode in the Taihu Lake region at that time[32]. During the Qing Dynasty, as Husi gained fame both domestically and internationally, the system dominated the agricultural production in the south Yangtze River region[23]. By now, the mulberry-dyke & fish-pond agricultural system, water transport facilities, drainage and irrigation systems, relics of traditional settlements, and traditional mulberry-fish culture in Digang Village, having vanished or still existing, witness the history of the silk industry in the Hangzhou–Jiaxing–Huzhou region.

In summary, the unique regional natural and cultural characteristics of Digang Village include the lake-polder settlements, historical sericulture villages relying on the Husi trade, traditional water conservancy and transport projects, as well as traditional mulberry-dyke & fish-pond agricultural ecosystems. Thus, the regional cultural identity of the mulberry-dyke & fish-pond agricultural heritage in Digang Village can be refined as a mirror of the development of silk culture in Hangzhou–Jiaxing–Huzhou region.

5.1.2 Delineating Interpretation Scope of Heritage Based on the Regional Cultural Identity

Defining a reasonable scope and providing a systematic and integral mode for the interpretation of the GIAHS in Digang Village are key to replacing the current isolated and static protection of the heritage. According to Freeman Tilden, interpretation is an educational activity to explain the relationships between things with authentic media, original objects and visitors' real experiences, instead of simply conveying factual information[33]. *The Charter for the Interpretation and Presentation of Cultural Heritage Sites* defines "interpretation" as "the full range of potential activities intended to heighten public awareness and enhance understanding of cultural heritage site."[34]

Centering on the regional cultural identity proposed above, the interpretation scope includes natural environment, cultural heritage, and industrial heritage related to sericulture, raw silk transportation, silk trade, and the Husi culture spatially (Fig. 4), guaranteeing the authenticity and integrity of the GIAHS in Digang Village. Specifically, the interpretation scope covers elements with natural (rivers, ports, wetlands, ponds) and cultural (historical buildings and relics), and historical (cultural and agricultural heritage) and contemporary (mulberry-dyke & fish-pond transforming into common fish ponds, new type of folk houses in historical villages, and newly-built tourism service facilities) characteristics. All of them can interpret relationships between regional environmental characteristics, local landscape features, and traditional livelihood patterns influenced by the



4. Map of the mulberry-dyke & fish-pond agricultural heritage in Digang Village.

Husi trade. Such a definition of the interpretation scope breaks limitations of the existing core protection area, bridging the gap between rural settlements and agricultural heritage, while treating nature and culture, and living and production spaces as integrated rural landscape heritage.

5.2 Meso: Village Scale

5.2.1 Establishing a Categorization and Grading Catalogue of Village Resources to Determine Display Sequence

Historically, flourishing water transport networks drove the prosperity of silk economy and culture in Digang Village, and the corresponding heritages are represented by the preserved branches of the canal, drainage and irrigation water conservancy works, and relics of irrigation works[35]. Meanwhile, historical buildings, relics, streets and alleys, production facilities, and the mulberry-fish culture collectively witness the village's formation, growth, and prosperity relying on canal transport and the vicissitude of the Husi production and trade. Categorizing and grading these natural and cultural heritage resources of the village help determine the priorities and sequence displaying them.

Firstly, sort all the natural environment resources, settlement landscape heritage resources, and industrial landscape heritage resources, and categorize them into spots, linear elements, and zones based on their spatial form (Table 4). Secondly, grade the resources into primary and secondary resource heritages based on the degree of their association with heritage value, authenticity, and integrity, which is also the reference of display priority.

5.2.2 Building a Graded Facility System for Value Display According to the Heritage Resource Priority

Referring to the categorization and grading catalogue of heritage resources within the village, a three-tier facility system comprising core, major satellite, and other satellite facilities can be established for Digang Village (Fig. 5). This system includes 1 core facility, 44 major satellite facilities, 16 other satellite facilities, and 2 exploration routes. The core facility, i.e., the Research Institute for Fish and Mulberry Culture in Digang Fishing Resort, functions multiply as a tourism reception center, cultural communication hall, research base, agricultural exhibition hall, information center, etc. It can provide a comprehensive interpretation of the natural and cultural heritage resources of the GIASH. The major and other satellite facilities are conducive to the graded protection and display of Digang Village's heritage resources.

Routes are a collection of facilities that connect, interpret, and present diverse regional characteristics[36]. The two planned exploration routes, by land and water, can help display heritage value and integrate facilities scattered throughout the village. For example, the water exploration route with existing waterways, drainage and irrigation systems, and linear waterways close to Lixiang Dam and Waixiang Dam can connect sluices, ferries, docks,

Table 4: Categories of natural and cultural heritage resources in Digang Village

Category	Spot	Linear element	Zone
Natural environment resources	Pond	Dongtiaoxi River, Laolongxi River	Hefuyang Wetland
Settlement landscape heritage resources	Famous ancient tree, former residence of celebrities, ancient bridges, historic buildings and relics, festival square, etc.	Streets and alleys, waterway	Ancient village protection area
Industrial landscape heritage resources	Port, wharf, pier, water-gate, silkworm room, Baisang Mulberry Garden	Hangzhou–Huzhou–Wuxi Channel, drainage and irrigation system, dyke of pond	Area of traditional mulberry-dyke & fish-pond landscape and fish pond

ancient bridges, etc., presenting a whole picture of the water transport history.

5.3 Micro: Site Scale

5.3.1 Enhancing Sense of Place in Daily Landscapes Through Site-specific Narratives

Site is the smallest unit in practices of rural environmental museum in villages, inseparable from the daily life and production of local communities[37]. Different heritage resources, due to their varied functions, are endowed by residents with different spatial meanings, forming scenes of living, production, and cultural activities.

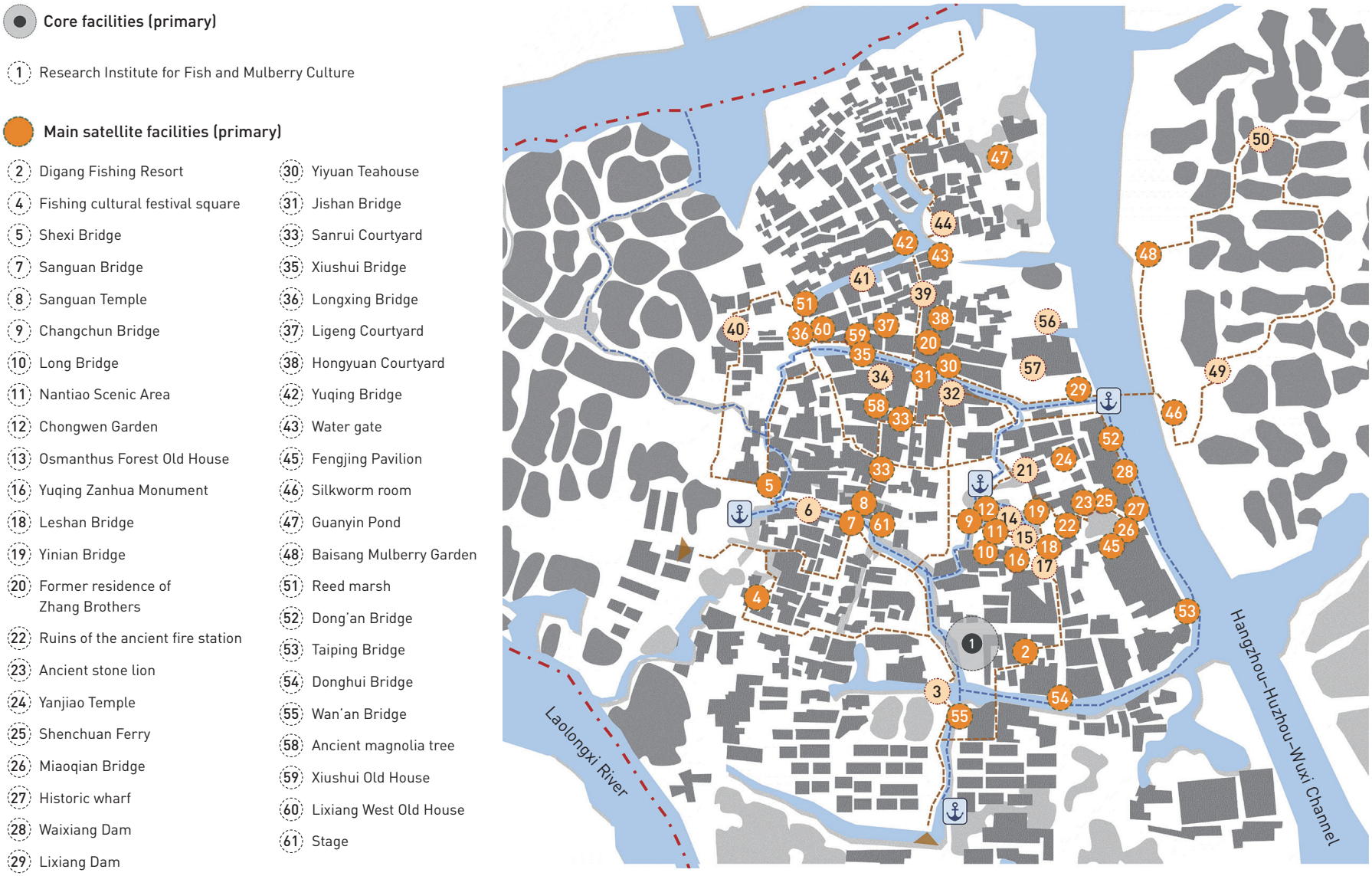
Overall, at the micro-scale, the survival of heritage is closely related to the daily activities of community residents. Residents are the core agent to foster the sense of place and to create and maintain heritage value. Forming a unique heritage narrative through daily community landscapes and integrating daily activities into heritage spaces can enhance residents' cultural identity and awareness of heritage protection. Meanwhile, individual elements and historical events can be integrated with daily community life in heritage narratives, and serial elements under the same spatio-temporal background can also be combined to represent historical scenes and interpret the value and significance of daily landscapes[38].

Moreover, using site-specific narratives to interpret heritage value from individual views[39] can enhance the sense of place and realize a dialogue between "history" and "reality." Through narratives of daily landscapes used to represent daily scenes featured with historical elements, community activities can be combined with the heritage, and residents will become more proactive in heritage protection. For instance, in Digang Village, Lixiang Dam, Waixiang Dam, and Yiyuan Teahouse are typical daily living scenes, with the silkworm room, Baisang Mulberry Garden, and fish ponds as daily production scenes, and festival square and fish culture festival square as scenes of community cultural activities.

5.3.2 Integrating Agriculture, Culture, and Tourism to Integrate Daily Community Activities Into Heritage Spaces

Historically, the mulberry-dyke & fish-pond agricultural heritage in Huzhou has provided livelihood support for local residents continuously, the agricultural production based on which has been the main source of income for families in this area. In turn, the local knowledge system, adaptive techniques, traditional production skills, and landscape and soil resource management methods obtained by the rural community have ensured the continuous development of the heritage agricultural system. From the perspective of value production, the daily landscapes are manifestation of daily life and production patterns of local communities, i.e., a living heritage. Hence, community residents are not only creators, participants, transformers of the landscape, but also inheritors and interpreters of heritage who can interpret the sites via their own narratives.

Dynamic development of the heritage should be the focus of display and utilization of the mulberry-dyke & fish-pond agricultural heritage in Digang Village. Here "dynamic" means an innovative and adaptive utilization of the heritage while maintaining its traditional agricultural production function. The



5. Hierarchical facility system to display the heritage value of Digang Village.

synergetic development of agriculture, culture, and tourism can increase the diversity and added value of agricultural products, and enrich livelihood modes of local communities[40]. It is important to strengthen visitors' immersive experience by a localized display of daily community activities. In this process, local residents shift from performers to producers, sellers, and protectors of the historical and cultural heritage[41], interpreters of the heritage value, and guides of heritage resources. The residents can share the benefits of

heritage development from displaying local community landscape, and heritage protection and community development can be achieved.

6 Conclusions

GIAHS are a shared treasure of humanity, while China's agricultural heritage embodies the ecological ethics of harmonious coexistence between human and nature, representing its long history of agricultural civilization. Protecting these non-renewable heritages is of great significance for maintaining China's biodiversity and cultural diversity, ensuring food security and farmer livelihoods, improving regional ecological environment, responding to extreme weather disasters, and promoting sustainable development.

The protection and sustainable development of the mulberry-dyke & fish-pond agricultural heritage reflect values across regional, village, and site scales. This research establishes a protection framework for the Huzhou Mulberry-dyke & Fish-pond GIAHS based on the concept and practical methods of rural environmental museum. Serving as a methodology for the protection of GIAHS, this paradigm can theoretically and practically integrate the value interpretation of the GIAHS with spatial planning measures, and promote heritage protection along with community development. Starting from a broader spatio-temporal perspective, this research proposes a step-by-step layered protection path centered on local communities, from interpretation to display then to dynamic utilization of heritage value, so as to emphasize the heritage and encourage public awareness and participation.

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基于田园空间博物馆理念的桑基鱼塘农业文化遗产保护研究——以浙江省湖州市荻港村为例

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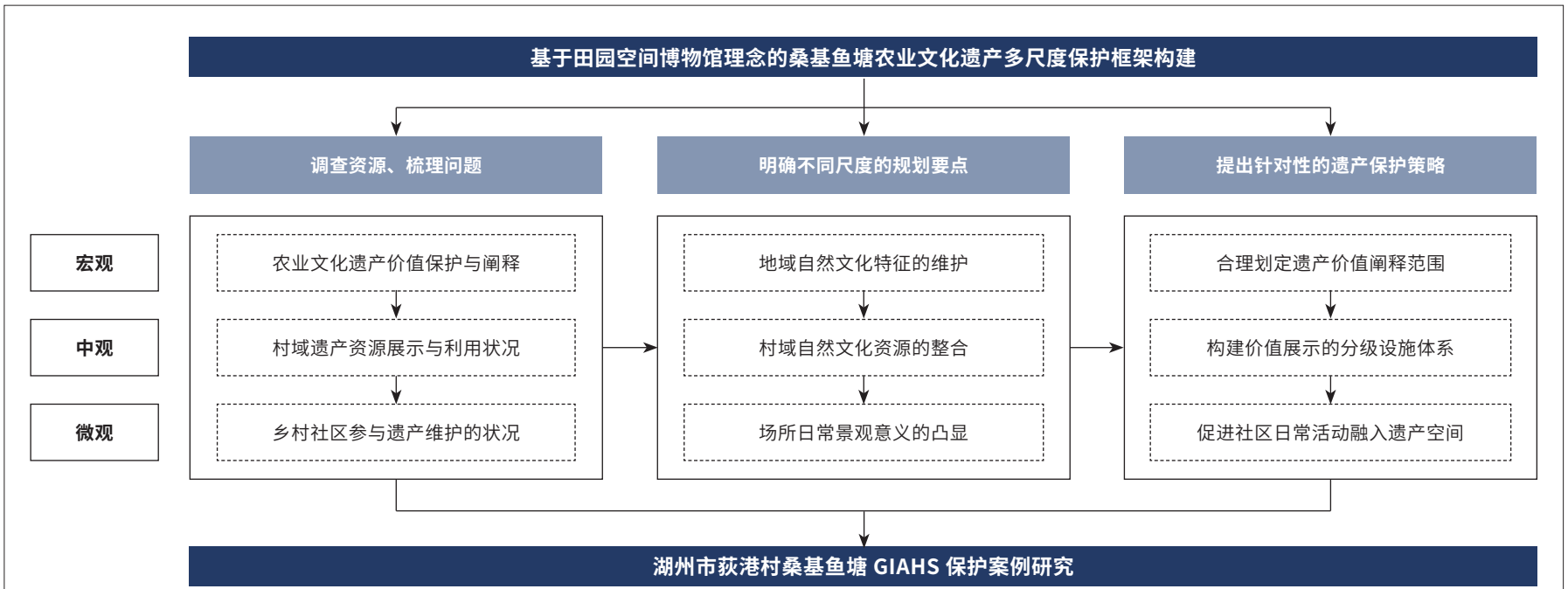
图文摘要



文章亮点

- 从理论层面建立了具有普适性的桑基鱼塘全球重要农业文化遗产价值保护方法框架
- 从实践层面验证了该框架在中国全球重要农业文化遗产保护领域的可操作性和有效性
- 探索了适合中国全球重要农业文化遗产的衔接价值阐释与空间规划的方法论，拓展了保护范式应用的广度和深度

关键词

全球重要农业文化遗产；
田园空间博物馆；
荻港村；
桑基鱼塘；
遗产保护；
农业景观

摘要

自2002年启动以来，全球重要农业文化遗产项目一直备受国际遗产学界的广泛关注。目前，中国的全球重要农业文化遗产项目总数虽已位居世界前列，但其中大部分仍存在价值阐释与展示不足、保护与利用模式难

以持续等问题。本文首先借鉴田园空间博物馆方法论，建立桑基鱼塘全球重要农业文化遗产的多尺度保护框架。进而以浙江省湖州市荻港村桑基鱼塘农业文化遗产项目为例，在厘清保护现状的基础上提出分层级的保护策略：宏观层面提炼遗产地域价值，划定价值阐释范围；中观层面确定遗产资源展示序列，建立价值展示分级设施体系；微观层面强化日常景观地方感，促进社区日常活动融入遗产空间。基于上述保护策略形成的从价值阐释到空间规划的操作路径可为其他农业文化遗产的保护实践提供借鉴。

编辑 王颖，王胤瑜
翻译 马蕊，高一菲，王颖，王胤瑜

1 引言

2002年，联合国粮食和农业组织（FAO）在南非约翰内斯堡发起一项全球伙伴关系倡议，启动了“全球重要农业文化遗产”（GIAHS）项目，旨在保护各国具有代表性的传统农业文化系统[1]。这一项目关注乡村地区人与自然经过长期协同进化和动态适应所形成的独特土地利用系统和农业景观[2]，提名遗产具有显著的活态特征。GIAHS名录不断完善，目前已涵盖农、林、牧、渔等多样化生产系统。伴随气候变化、城镇化加速推进和过度旅游开发，GIAHS将不可避免地受到冲击，只有提高对GIAHS的认识水平和保护力度，才能促进其价值的延续。[3]

GIAHS是一种景色优美的可持续景观系统，产生于社区对环境的长期适应过程，结合了农业生物多样性、韧性生态系统及宝贵的文化遗产[4]。GIAHS项目启动后，FAO开始在全球评估典型的传统农业系统[5]，截至2023年底已认证了26个国家的86个农业遗产地，类别涵盖农田景观、复合系统和物种资源等[6]。在亚太地区的57项GIAHS中，中国坐拥22项，彰显出其历史悠久且丰富的传统农业知识与技术，以及极富智慧的农业生态系统。与此同时，GIAHS在应对气候变化、保障粮食和生计安全、建立韧性社区、支持生物多样性[7]等方面的价值也逐渐被国际社会所认知和重视，成为了维系生物文化多样性的宝库。浙江省湖州桑基鱼塘系统于2017年入选GIAHS名录，对于该系统的保护面临一系列问题，亟需从多尺度厘清其保护重点和实施路径，明确阐释其遗产价值，以实现可持续的保护、展示、传承和活用。

近年来，已有学者对“田园空间博物馆”（rural environmental museum）理念进行了深入的理论引介[8]。有别于传统的博物馆藏品展示，该理念将整个乡村地区视作一个博物馆，通过保护和活用人与自然互动形成的有形和无形文化资源、依托的自然环境资源等，达到展示遗产价值、传播资源信息、实现地区振兴和复兴的目的[9]。田园空间博物馆制度自创立后在乡村景观、传统农业设施的保护中发挥了显著的效果[8]，但其在GIAHS保护领域的应用仍有待拓展。鉴于此，本文基于田园空间博物馆理念，探索适用于湖州市桑基鱼塘农业文化遗产的保护框架并在实践中加以验证，以补充这一理念在GIAHS领域的应用。

2 湖州市桑基鱼塘农业文化遗产概况

2.1 GIAHS项目评估标准

FAO主要依据五项标准来认定GIAHS：粮食和生计安全，农业生物多样性，地方和传统知识体系，文化、价值体系和社会组织，以及景观和海景特色[10]。尽管GIAHS也属于持续演进的文化景观，但其评估标准有别于世界文化遗产——GIAHS项目必须同时满足上述五项标准。此外，这五项评估内容相互关联，连接了物质与非物质、遗产与社区、自然与文化，共同构成了GIAHS人与自然和谐共生的核心价值，表明GIAHS是一个活态的、不断发展的人工生态复合系统。

2.2 湖州市桑基鱼塘农业文化遗产特征

湖州市桑基鱼塘农业文化遗产是中国现存最集中、面积最大、保留最完整的基塘系统之一，重点保护区域位于南浔区菱湖镇与和孚镇，处在长江三角洲太湖南部地区，总面积达6 900hm^2。[11]该桑基鱼塘系统起源于距今2 500年前的春秋战国时期，世代居民通过长期实践，发展出适应于湿地环境的农业生态系统，至今整个区域仍保存有面积近4 000hm^{2}的桑园和近10 000hm^{2}的鱼塘[12]。作为一处GIAHS，湖州桑基鱼塘系统实现了多种农业生产方式的和谐共生（表1）[12]。

3 基于田园空间博物馆理念构建农业文化遗产保护体系

3.1 田园空间博物馆理念

田园空间博物馆理念源于生态博物馆（ecological museum）概念，后者指在一定地域范围内，以居民参与为基础、以地域特征为导向，用可持续的方式对文化遗产、社会环境和生态环境进行整体保护和利用的方式[13][14]，目的是实现遗产与社区的整体发展[9]。这一概念于1972年在法国首次提出，此后50多年间在世界各地博物馆建设实践中得到了广泛认可，并发展成为一套全新的遗产保护范式。生态博物馆强调自然和文化遗产的原地保护[15]，将遗产保护和展示置于广阔的自然环境中，强调遗产与历史文化、自然资源、生态区和农业实践的联系，并提出将社

表 1：湖州市桑基鱼塘农业文化遗产的评估情况

GIAHS 评估标准	具体情况
粮食和生计安全	桑基鱼塘系统为人们提供了丰富、生态、安全和优质的农产品，成为遗产区居民家庭收入的主要来源，并为农村家庭提供了持续的工作机会
农业生物多样性	桑基鱼塘系统支持了生物多样性与生态服务功能，既保持了特定植物和动物物种的遗传资源多样性，又实现了对环境的“零”污染、对洪水的调蓄及对区域小气候的调节等
地方和传统知识体系	区域内居民掌握桑树育种技术和嫁接技术、桑树栽培管理技术、蚕养殖技术、传统缫丝和纺织技术，以及鱼塘三维生态养殖技术等，很好地维持了生态系统的持续发展；发展出的低地水利工程和池塘水质控制技术也降低了地区灾害影响，维持了池塘的生态平衡和良好水质
文化、价值体系和社会组织	依托桑鱼农业生产方式形成了养蚕丝绸文化和丝织生产技艺，以及相关的非物质文化遗产，对传播丝绸之路遗产具有重要意义
景观和海景特色	桑园和鱼塘相互连接、相互加固，形成桑基鱼塘景观；当地居民构建起了湇港横塘排灌工程进行水资源管理，能够蓄水防旱、改良土壤、抵御洪涝灾害

区作为博物馆的核心[16]，提供了认识地方、理解地方的最佳策略[17][18]。在此基础上，1998年12月，日本农林水产省提出“田园空间博物馆计划”[19]，建立了生态博物馆本土化的实施路径，细化了适用于乡村地区遗产保护与社区发展的行动框架和步骤，形成一套易于操作的指导生态博物馆实践的纲领性文件。这也是田园空间博物馆理念的首次提出。

日本田园空间博物馆理念包含三大要素，即核心设施、辅助设施和探索路径，着眼于“水”“土”“聚落”[8]。田园博物馆不是简单用线性路径将资源串联起来，而是在灵活组织区域地理特性的基础上，整合点、线、面状资源，将乡村地域整体看作博物馆空间与领域。它的露天生态博物馆特征能够将村落与农业遗产作为一个整体来展示，有助于实现二者协同发展[20]。目前，日本已建立了56处田园空间博物馆[8]，探索出了生态博物馆在日本乡村振兴和遗产保护中的适应性方法和实现路径。

3.2 田园空间博物馆作为GIAHS保护范式的优势

从1995年开始，中国在乡村地区陆续开展了生态博物馆实践[15]，探索了民族村落和农业文化遗产地[21]的生态博物馆方案，衍生出了民族村落生态博物馆[22]、邻里博物馆、社区博物馆[13]等。但现有实践多是各地自发探索，未形成一套可复制的统一行动框架；并且大部分生态博物馆建成后侧重旅游开发，缺少与社区日常生活的连接，导致社区难以成为遗产保护主体，失去了生态博物馆的核心。因此，借鉴田园空间博物馆保护范式，构建适应于中国本土农业文化遗产保护的实施框架，将有助于促进中国GIAHS保护方法论的建立。

总体来看，以田园空间博物馆理念作为GIAHS保护范式，与传统保护范式在边界划定、保护主体、保护要素、保护方法和展示方式上存在差异（表2）①。田园空间博物馆保护范式的优势主要体现于三个方面：其一，尊重了场地的“时间”与“空间”特征，强调对历史、自然、文化和产业等资源的系统化阐释和整体保护；其二，强调对历史发展脉络的动态展示，而不是特定历史片段的孤立呈现，能够对GIAHS中逐渐消失、濒临消失和现存发展的遗产样态进行“真实”和“完整”的展示；其三，社区参与农业生产和遗产维护是GIAHS存续的关键——田园空间博物馆范式强调社区参与地方特征的组织与重绘，能够使相关设施和遗产真正与地方产生联系，促进乡村社区日常生活和生产活动融入遗产。

3.3 基于田园空间博物馆理念的桑基鱼塘GIAHS保护框架构建

基于田园空间博物馆理念，结合湖州桑基鱼塘GIAHS评估标准，建立桑基鱼塘农业文化遗产保护实施框架（图1）。整个框架可划分为三个阶段，涵盖了宏观、中观、微观三个尺度。第一阶段是调查资源，梳理保护存在的问题。第二阶段是明确不同尺度的规划要点：宏观层面，在更广阔的时空背景下认知地域自然与文化特征，提炼遗产地域价值主题；中观层面，围绕地域价值主线，对村域内的自然和文化资源进行整合，确定遗产资源展示的序列；微观层面，在社区生活型、生产型、休闲型场所中，组织和引导社区活动，强化日常景观的地方感。第三阶段是提出针对性的遗产保护策略，包括合理划定遗产价值阐释范围、构建

① 传统保护范式的相关特征总结自《中华人民共和国文物保护法（2017 年修正本）》《中华人民共和国非物质文化遗产法（2011 年）》《历史文化名城名镇名村保护条例》《历史文化名城名镇名村保护规划编制要求（试行）》《传统村落保护发展规划编制基本要求（试行）》等规范文件。田园空间博物馆保护范式的相关特征总结自日本农林水产省网站及参考文献 [8][9][19]。

表 2：传统保护范式与田园空间博物馆保护范式对比

保护范式	边界划定	保护主体	保护要素	保护方法	展示方式
传统	根据农业生产系统范围或村庄聚落范围划定保护边界	专家、地方政府	传统农业生产系统、历史遗址遗迹、文物保护单位、非物质文化遗产等	文物式保护、静态式保护	以旅游资源与旅游产品形式进行展示，主要面向旅游者
田园空间博物馆	以完整阐释遗产价值的生活、生产和生态空间为保护范围	以在地社区为中心，多方参与	体现人与自然互动系统之价值的所有要素	整体式保护、动态式保护	融入社区日常生活、生产场景的在地化展示，面向社区居民和旅游者

分级的价值展示设施体系、促进社区日常活动融入遗产空间三个层级。整个保护框架以社区参与为中心，通过多尺度衔接、多层次递进，逐层突破现状问题，以实现桑基鱼塘农业文化遗产的动态保护与发展。

4 案例研究：基于田园空间博物馆理念的荻港村桑基鱼塘GIAHS保护现状

案例研究区域隶属于湖州市和孚镇荻港村，处于大运河文化遗产頔塘故道片区、湖州桑基鱼塘核心保护区和中国历史文化名村荻港村三项遗产交界，村域面积6.3km^2，现有人口1 000余户，总人口4 000余人[23]，属于典型的湖荡圩田型聚落。村域内桑基鱼塘农业文化遗产保护区面积66.7hm^2，延续了传统的农业生态系统和生产方式[24]。通过对荻港村自然资源、人文资源和农业遗产保护状况开展田野调查，以及对村民进行深度访谈，研究团队梳理了村域内桑基鱼塘农业文化遗产的价值保护与阐释、资源展示与利用、乡村社区参与遗产维护三方面状况，归纳其保护中存在的问题如下。

4.1 现状保护范围难以实现遗产价值的完整阐释

荻港村针对中国历史文化名村和桑基鱼塘GIAHS分别划定了保护范围（图2），划定方式包括：1）依据《荻港村历史文化名村保护规划（2011—2020）》划定古村保护区和桑基鱼塘保护区；2）依据《南浔桑基鱼塘保护规划（2022—2035）》，进一步将荻港村桑基鱼塘保护区细分为桑基鱼塘传统风貌保护区、一类建设控制地带（桑基鱼塘传统风貌修复区），以及二类建设控制地带（建设限制区）[23]。现有保护举措倾向于刚性边界管控，这种近似对文物进行“冻结保存”“孤岛式保护”的措施无疑会割裂农业文化遗产与地域自然环境、文化环境的依存关系，进而破坏桑基鱼塘农业文化遗产价值阐释的完整性。正如《制定GIAHS提案文件的指南》所阐述，这种对GIAHS景观与周围环境的复杂性和连通性的狭隘认识，可能导致对GIAHS的片面理解，并将未来的保护活动限制在占GIAHS总面积很小的一部分区域内。[10]

4.2 非叙事性资源展示导致公众对遗产价值感知较弱

从村域内自然环境资源、聚落景观遗产资源、产业景观遗产资源现状展示与利用情况可知，已有资源展示方式多为传统博物馆、室内展示馆或依托历史建筑和遗迹的散点展示，这类非叙事性展示削弱了遗产的历史、文化和在地价值。而非物质文化资源展示则集中于荻港渔庄的笔道馆、鱼桑文化研学院、鱼骨画体验室和节庆广场等，多供外部的研学团队使用，与当地居民的日常活动联系较弱。同时，资源利用方式也较为单一，多以生态观光、非物质文化研学、美食体验为主，集中于荻港渔庄、里巷埭、外巷埭、百桑园与蚬壳湾等资源点，缺少桑基鱼塘农业文化遗产、村落历史文化遗产的深度体验项目（表3）。

在非叙事性资源展示模式下，公众对遗产价值的感知较弱，村民也较难产生文化认同感。对荻港村游客的访谈结果显示，90%以上的游客普遍不了解桑基鱼塘GIAHS，旅游目的多为品尝当地美食（陈家菜）、周末到荻港渔庄休闲度假。有学者的调查也显示，仅有不足2%的游客知道湖州桑基鱼塘系统为GIAHS[11]。因此，系统化展示和综合利用桑基鱼塘GIAHS的价值，提升公众对桑基鱼塘GIAHS的价值认知，实现桑基鱼塘农业文化遗产与当地社区的互动，成为保护工作成功的关键。

4.3 遗产维护主体改变导致桑基鱼塘农业生态系统功能衰退

近年来，随着桑基鱼塘系统经济效益的降低[25]，当地社区居民生计模式发生改变，一部分居民向城镇转移，还有部分将桑基鱼塘复合种养

表 3：获港村遗产资源展示与利用现状

遗产资源类型	具体内容	展示状况	利用状况
自然环境资源	河、港、漾、塘	未进行展示和解说	航道衰退，填塘造地导致池塘面积减少
聚落景观遗产资源	物质载体要素	可移动文物主要通过传统博物馆展示，部分历史建筑和遗迹、文物保护单位为散点展示，未展示其他一般物质载体要素	资源开发集中于里巷埭和外巷埭
	非物质文化要素	主要在获港渔庄的笔道馆、鱼桑文化研学院、鱼骨画体验室和节庆广场等场所集中展示	突出鱼文化节和陈家菜，开发部分青少年非遗研学项目
产业景观遗产资源	湨港横塘排灌工程、航道和水运设施、桑基鱼塘农业生态系统	以保护为主，缺少系统化展示	围绕百桑园与蚬壳湾开展生态观光活动
	传统农业生产知识和技术	仅在获港渔庄的鱼桑文化研学院进行解说	桑基鱼塘核心保护区保留了传统农业生产知识和技术，但未深入挖掘利用

模式转变为鱼塘单一养殖模式，导致桑基鱼塘系统面积缩减[26]。丝绸贸易衰落、生计方式改变、大量蚕农外流成为威胁桑基鱼塘GIAHS可持续性的主要因素。由图3可知，虽然湖州桑基鱼塘系统分别于2014年和2017年被列为中国重要农业文化遗产和GIAHS，但研究区域仅有核心保护区仍保持3:7的桑基与鱼塘比例[27]，外围区域已被光伏农业和一般鱼塘大面积占据，致使基塘比例降至2:8甚至更低。原本作为遗产日常维护主体的社区居民的退出，更造成桑基鱼塘农业生态系统的现实维护困境。而为了保护传统桑基鱼塘农业生态系统，村集体替代村民成为遗产维护主体，以征用的方式统一管理桑基鱼塘核心保护区的景观特征，但也难以阻止整个系统功能的衰退。村域尺度上基塘比例的改变和桑基鱼塘农业系统的功能衰落，造成了水陆之间养分交换和能量流动水平的变化[25]，而单一种养模式下化肥和鱼药的使用也打破了生态循环系统的平衡[28]并造成了生物多样性的减少。

5 基于田园空间博物馆理念的获港村桑基鱼塘GIAHS保护策略

针对获港村桑基鱼塘GIAHS保护现状，本研究借助多尺度保护实施框架，从地域、村域和场所三个尺度明确规划要点，提出相应的遗产保护策略[29]。从提炼遗产地域价值主题、确定村域遗产资源展示序列、强化日常景观地方感三个层面入手，试图实现对获港村桑基鱼塘GIAHS价值的调查、保存、阐释、展示和活化利用。

5.1 宏观地域尺度

5.1.1 归纳地域自然文化特征，提炼遗产地域价值主题

从空间联系的广度来看，获港村地处杭嘉湖中部低地平原区，具有河港纵横、水塘密布[30]的湿地环境特征。从较长的历史时期来看，获港村桑基鱼塘农业文化遗产的发展与湖丝贸易的兴衰紧密相关。[30][31]根据考证，有学者认为湖州桑基鱼塘系统已拥有2 500多年的历史，早在春秋战国时期，这里的先民已开始挖塘筑堤，形成桑基池生态模式，探索出了桑叶养蚕、蚕粪养鱼、塘泥养桑的独特低地农业循环系统。[12][32]明清时期，依托于湖丝贸易的发展，湖州桑基鱼塘系统逐步扩大繁荣，以湖州为中心成为全国最发达蚕区的一部分。据明末清初张履祥《补农书》中记载，当时桑基鱼塘系统已成为太湖地区主要的农业生产方式[32]。清朝时期，随着湖丝享誉国内外，桑基鱼塘成为江南地区农业经营的主要模式[23]。至今，获港村业已消失和仍然保留的桑基鱼塘农业系统、漕运水利设施、湨港横塘排灌工程、传统聚落历史遗存、桑鱼传统文化等，共同见证了杭嘉湖平原地区丝绸产业的兴盛与衰落。

综上，可归纳出获港村独特的自然和文化地域特征：杭嘉湖平原地区湖荡圩田型聚落、依托湖丝贸易形成的历史蚕业村庄、水利水运工

程，以及传统桑基鱼塘农业生态系统。据此提炼出荻港村桑基鱼塘农业文化遗产地域价值主题为：杭嘉湖平原地区丝绸文化发展的完整见证。

5.1.2 围绕地域价值主线，合理划定遗产阐释范围

为荻港村桑基鱼塘GIAHS地域价值划定合理的阐释范围、进行系统化阐释，完整解说荻港村桑基鱼塘GIAHS的意义，是破解目前遗产区“孤岛式”“凝固式”保护问题的关键。弗里曼·蒂尔登认为，阐释是一种教育活动，目标是通过原生事物的利用、参访者亲身经历，使用直观媒介解释事物间的关系，而非事实信息的简单传递[33]。《文化遗产阐释与展示宪章》将“阐释”明确定义为“一切可能的、旨在提高公众意识、增进公众对文化遗产地理解的活动”[34]。

围绕“杭嘉湖平原地区丝绸文化发展完整见证”的价值主线，将空间上与蚕丝生产、生丝运输、丝绸贸易、湖丝文化相关的自然环境、文化遗产和产业遗产纳入阐释范围内（图4），以体现荻港村桑基鱼塘GIAHS的真实性与完整性。阐释范围包含遗产的自然（河、港、漾、塘等）与文化（历史建筑、历史遗迹等）、历史（文化遗产和农业遗产等）与当代（桑基鱼塘演变的一般鱼塘、历史文化名村中新建的民居和旅游服务设施等）要素，解释了湖丝贸易影响下的地域环境特征、乡土景观特征和传统生计方式之间的关系。并且，划定的价值阐释范围突破了现有核心保护区的局限性，打通了乡村聚落与农业文化遗产的边界，将自然与文化、生活与生产空间作为一个完整的乡村景观遗产来看待。

5.2 中观村域尺度

5.2.1 建立村域资源分类分级目录，确定遗产资源展示序列

历史上兴盛的漕运网络带动了荻港村丝绸经济和文化的繁荣，保留至今的运河支系航道、湨港横塘水利设施、运河水工遗存和运河附属遗存[35]等都成为地域价值的见证。而村域内保存下来的历史建筑、历史遗迹、历史街巷、生产设施和桑鱼文化等，共同见证了村落依运河而存、因漕运而兴、依水运成市的过程，也见证了湖丝生产经营模式由盛转衰的过程。对村域自然环境与文化遗产资源进行分类分级，有助于确定资源展示的序列，强化遗产价值主线。

首先，梳理和细化自然环境资源、聚落景观遗产资源、产业景观遗产资源，依据空间的形态将其划分为点状、线状和面状要素（表4）。其次，依据不同资源与遗产价值的关联度、真实性与完整性状况，将其划分为一级遗产资源和二级遗产资源，以区分遗产资源展示的优先级。

5.2.2 依据遗产资源序列，构建价值展示的分级设施体系

依据村域内遗产资源的分类分级，借鉴田园空间博物馆模式，建立荻港村“核心设施—主要辅助设施—其他辅助设施”三层分级设施体系（图5），包含1项核心设施、44项主要辅助设施、16项其他辅助设施及2条探索路径。其中，核心设施为荻港渔庄内的鱼桑文化研学院，该研学院具有复合功能特征，融合了旅游接待中心、文化传习馆、研学中心、农业博物馆展厅、信息中心等多项功能，能够对村域自然和文化遗产资源进行综合性阐释。而主要辅助设施和其他辅助设施则有助于对荻港村遗产资源展开分级保护与展示。

路径是串联、阐释和展示地域特色不同要素的设施集合[36]，村域内规划有陆上和水上两类探索路径，能够辅助价值展示及整合散布的设施。如利用现状航道、湨港横塘，以及紧靠里巷埭和外巷埭等线型水系规划的水上探索路径，串联了闸坝、渡口、码头、古桥等遗址，通过舟行水上的空间转换呈现出漕运经济发展的历史时空全貌。

5.3 微观场所尺度

5.3.1 借助场所日常叙事，强化日常景观地方感

场所是田园空间博物馆理念在乡村实践的最小单元。场所与社区居民日常的生活和生产密不可分[37]，不同的遗产资源由于使用功能的差异，被社区居民赋予了不同的空间意义，形成了社区日常生活场景、生

表 4：荻港村自然与文化遗产资源分类情况

资源类别	点状要素	线状要素	面状要素
自然环境资源	池塘	东苕溪、老龙溪	和孚漾
聚落景观遗产资源	古树名木、名人故居、古桥、历史建筑、历史遗迹、节庆活动广场等	街巷、水系	传统村落保护区
产业景观遗产资源	港口、码头、埠头、闸口、蚕房、百桑园	杭湖锡线航道、湨港横塘、塘基	传统桑基鱼塘风貌区、鱼塘风貌区

产场景和文化活动场景。

整体来看，微观层面遗产的存续和社区居民的日常活动有密切联系，社区居民作为培育和塑造地方感的行动主体，也是创造和维护遗产价值的主体。以社区日常景观来塑造遗产的差异性叙事，将社区日常活动融入遗产空间，有助于提升社区居民的文化认同感和遗产保护意识。在遗产叙事中，将单体要素、历史事件与日常生活整合，对同一时空背景下的系列要素进行组合，有助于再现历史场景，诠释日常景观存在的价值和意义[38]。

并且，借助场所日常叙事从社区的视角阐释遗产价值[39]，能够强化地方感，实现场景中历史与当代的对话。通过历史要素的日常场景呈现，将社区居民活动融入遗产空间，强化日常景观的地方感，能够培育和塑造社区居民保护遗产的主人翁意识。例如，里巷埭、外巷埭、一元茶馆等可作为荻港村社区日常生活场景呈现，小蚕房、百桑园、鱼塘可作为社区日常生产场景呈现，节庆广场和鱼文化节广场则是作为社区文化活动场景呈现。

5.3.2 通过农文旅融合，促进社区日常活动融入遗产空间

从历史上看，湖州市桑基鱼塘农业文化遗产为荻港村居民提供了持续的生计保障，与桑基鱼塘相关的农业生产是遗产区乡村家庭收入的主要来源。而乡村社区具有的知识系统与自适应技术、传统生产技艺、景观与水土资源管理方式又保障了桑基鱼塘生态农业系统的延续发展。从价值生产角度来看，日常景观是在地社区日常生活与生产方式的体现，是活态的遗产。社区居民不仅是景观的创造者、参与者、改造者，也是遗产的传承者和解说主体，能够以个人叙事的方式诠释场所意义。

荻港村桑基鱼塘农业文化遗产的展示与利用应注重遗产的动态发展特征。在保持其传统农业生产功能的基础上，实现遗产的创新性利用和适应性发展。采用农文旅融合发展模式能够丰富产品类型、增加农产品附加值、改善当地社区单一生计模式[40]。其中，应注重社区日常活动场景的融入，改“布景式”表演为“沉浸式”体验，突出社区日常活动场景的在地化展示。将社区居民角色从表演者转变为桑基鱼塘农业产品的生产者、特色农产品的销售者、历史文化资产的保护者[41]、遗产价值的解说者和遗产资源的导赏者。让社区居民共享遗产发展收益，将社区日常景观转变为遗产的展示内容，以实现遗产保护与社区发展的相互促进。

6 结语

GIAHS是全人类共有的财富，而中国的农业文化遗产体现了人与自然和谐共生的生态伦理观，是中国悠久农耕文明的见证。保护好这些不可再生遗产，对保持中国的生物多样性和文化多样性、保障食品安全和农民生计、改善区域生态环境、应对极端天气灾害和促进可持续发展意义重大。

湖州市桑基鱼塘农业文化遗产的保护和可持续发展具有地域、村域、场所等多尺度的价值。本研究基于田园空间博物馆理念和实践方法，从宏观、中观、微观三个层面建立湖州桑基鱼塘GIAHS多尺度保护框架，将之作为桑基鱼塘GIAHS价值保护的方法论。这一保护范式对促进桑基鱼塘GIAHS价值阐释与空间规划衔接、推动遗产保护与社区协同发展具有理论与实践的指导意义。本文从更广阔的时空维度入手，建立以在地社区为中心的“价值阐释—价值展示—价值活态利用”层层递进的保护路径，有助于全面解说遗产价值和意义，增进公众理解和参与。

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图 1.　桑基鱼塘 GIAHS 多尺度保护实施框架图
图 2.　现状遗产保护范围示意图
图 3.　桑基鱼塘农业景观演变
图 4.　荻港村桑基鱼塘农业文化遗产地域价值阐释范围图
图 5.　荻港村遗产价值展示的分级设施体系图