

**Conservation and Adaptive Management of
Globally Important Agricultural Heritage Systems
(GIAHS)**

**The GIAHS –Rice Fish Culture
China Project Framework**

**Centre for Natural and Cultural Heritage
IGSNRR/CAS**

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GLOSSARY AND ACRONYMS

CAS	Chinese Academy of Sciences
CBD	Convention on Biological Diversity
CCD	Convention to Combat Desertification
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Centre for Tropical Agriculture
CIRAD	French Centre for International Cooperation and Agronomic Research
COP	Conference of the Parties
CSO	Civil Society Organisation
EU	European Union
ENGREF	French Institute of Forestry, Agricultural and Environmental Engineering
ETC Group	Action group on Action on Erosion, Technology and Concentration
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GHG	Green House Gases
GIAHS	Globally Important Agricultural Heritage Systems
GPA (PGRFA)	Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture
GRAIN	Genetic Resources Action International
GTZ	German Society for Technical Cooperation
HYV	High Yielding Varieties
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICRAF	International Centre for Research in Agroforestry
IFAD	International Fund for Agricultural Development
IFAP	The International Federation of Agricultural Producers
IGSNRR	Institute of Geographic Sciences and Natural Resources Research
IITC	International Indian Treaty Council
ILEIA	Centre for Information on Low External Input and Sustainable Agriculture
ITDG	Intermediate Technology Development Group
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IPGRI	International Plant Genetic Resources Institute
ISRIC	International Soil Reference and Information Centre
IUCN	International Union for the Conservation of Nature
MA	Millennium Assessment of the State of the Worlds' Ecosystem
MAB	Man and Biosphere (programme)
MDG	Millennium Development Goals
MoA	Ministry of Agriculture, PRC
MoC	Ministry of Culture, PRC
MoST	Ministry of Science and Technology, PRC
NBSAP	National Biodiversity Strategies and Action Plan
NGO	Non Governmental Organization
NUFFIC	Netherlands' Organization for Cooperation in Higher Education
PLEC	People Land and Environmental Change (project)
PRA	Participatory Rural Appraisal
ROA	Roles of Agriculture (project)
RFC	Rice-Fish Culture
SARD	Sustainable Agriculture and Rural Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
UNFIP	United Nations Fund for International Partnerships
UNU	United Nations University
WEHAB	Water Energy Health Agriculture Biodiversity
WHC	World Heritage Commission
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development
WWF	World Wildlife Fund

The GIAHS –Rice Fish Culture China Project Framework¹

1 INTRODUCTION

This document presents the Chinese National Project Framework of a global initiative of the Food and Agriculture Organisation (FAO) concerning *Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS²)*. China is one of the six pilot countries of this initiative, for which Longxian Village, Qingtian County, with its traditional Rice-Fish agriculture has been selected as a pilot system to develop a methodology for “dynamic conservation” of agricultural heritage systems.

The preparatory phase of the project has been facilitated and organised by the Chinese Academy of Sciences, with agreement from the Ministry of Agriculture (MoA) which managed to interest both national and local stakeholders to take part in the project. The project preparatory phase (2004-2006) has been carried out with the support from the Global Environmental Facility (GEF) through a PDF-B grant, in collaboration with the UNDP. This document takes stock of the initiative as it has developed so far, and proposes an action plan for the full scale project implementation of Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems in China.

2 BACKGROUND AND JUSTIFICATION

2.1 Physical and Socio-economic Characteristics

2.1.1 Location

Qingtian County is located in the middle south of Zhejiang Province and the lower reaches of Ou River, which covers a total area of 2,493 km². The GIAHS designated village— Longxian village is a typical south village in the southeast of Fangshan Town, one of towns in Qingtian County, covering an area of 4.6 km².



2.1.2 Socio-economic characteristics of the County

Qingtian County is one of the poor counties in the southeast of China with financial income of 405 million yuan (based on 2004 record). There are about 475,153 people in the whole county, most of them people are working in abroad. Longxian village is a typical overseas Chinese village of Qingtian County, there are 510 registered people, about half or less lives in the village, and the rest of the

¹ This document is prepared by Prof. Min Qingwen and Mrs Sun Yehong from the Chinese Academy of Sciences, Dr. Frank van Schoubroeck from Wageningen International, Mr. Liang Luohui from UNU and Dr. Mary Jane Dela Cruz from FAO, who provided technical suggestions to align the country project document with the global GIAHS Project Document.

² GIAHS are defined as “remarkable land use systems and landscapes which are rich in globally significant biological diversity, indigenous knowledge and unique cultural practices evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development.”

population are working in other countries. According to the local statistics, over 650 people of Longxian village are still live in abroad.

The industry of Qingtian County is not well developed and people living in countryside mainly rely on the money from abroad to improve their living standard. Meanwhile, the rice-fish farming is still one of the most important living styles for some of them.

2.2 History and General Characteristics of the Rice-Fish Culture

2.2.1 History of the Rice-Fish Culture (RFC)

Rice is one of the principal food crops in the world. It provides 20% of total calorie supply of the world population. Ninety percent of rice fields are distributed in the Asia. Ninety percent of them are wet fields, irrigated, rained or floodplains. Upland rice fields accounts only for a small percent of the areas for rice production.

Over a long history, fish is cultivated in some wet rice fields, either concurrently or rotationally with rice in Asian region. The canon for fish culture written by Fan Li about 400 BC states:

... dig six mu of land into a pond ... put 2000 fry into the pond ... sell the rest in the market."

In a good year with ample rainfall and moderate weather, 2000 carp fry could produce numerous eggs. Some wise farmers may have placed excess fry in their rice fields. The fish in the rice fields may have grown better than those in the ponds, and the practice of raising fish in rice fields was born. There are no records of when the practice started, but this seems to be a logical explanation of how rice-fish farming began in China. The early written record of rice-fish culture in *Recipes for Four Seasons* which was written by Cao Cao³ in the Sanguo Era (200-265 AD) mentions that "a small fish with yellow scales and a red tail, grown in the rice fields of Pi County northeast of Chengdu, Sichuan Province, can be used for making sauce."



The rice-fish farming system is described not only as one of production style, but also as one of the culture. Tombs of the mid-Eastern Han Dynasty (25-220 AD) were excavated in 1964 in Hanzhong county, Shanxi Province⁴. Two clay models were unearthed: a model of a pond and a model of a rice field. The pond model contained 15 miniature pieces (6 common carp, 1 soft-shell turtle, 3 frogs, and 5 water chestnuts). A stone carving of a pond and rice field model was discovered in the brick tomb of the Eastern Han Dynasty in 1977 in E'mei County, Sichuan Province. Half the stone was carved into a pond with frogs, fish, and ducks. The other half was carved into a rice field with an inlet and outlet, two farmers toiling on one side, and two heaps of manure on the other. Four mid-Han Dynasty tombs with 200 relics were excavated in 1978 in Mian County, Shanxi Province. One of the intact relics was a rice field model containing 18 pottery miniatures of aquatic plants and animals. There were sculptured frogs, eels, spiral shells, crucian carp, grass carp, common carp, and turtles in this model. Another of a winter rice field showed farmland with a reservoir that also contained these fish. These relics not only proved that rice-fish farming system was one of farmer's production practices 1700 years ago. It also proved that the early rice-fish farming system is a very diverse system.

RFC also has a long history in the pilot site of Qingtian County. The Annals of Qingtian County compiled during the Hongwu Period of Ming Dynasty (1368-1398) records that "Rice field fish is red, black or varicolored. It is cultured in rice fields and dyke ponds. The long history has led to a rich

³ Cao Cao is the emperor of Wei in The Three Countries Dynasty.

⁴ Liang, Jiamian. *History of China's Agricultural Sciences and Technology*. Chinese Agricultural Press. Beijing. 1986. pp. 155-158.

tradition of rice-fish culture, not only in the field of agricultural knowledge and tools, but also in folklore, including local customs, festivals, cuisine, etc.

2.2.2 Key species in the area

The selected pilot site for RFC has a rich biodiversity component. Agricultural biodiversity includes forest species (70% of the water catchments), traditional rice varieties (20 native rice varieties; many threatened), plant species for home gardens, and livestock/poultry breeds; trees and field hedges; numerous native vegetables and fruits including lotus roots, beans, taro, eggplant, Chinese plum (*Prunus Simoni*), mulberry; 6 native breeds of carp red/black/white/variegated carp. Common species in Qingtian County are listed below:

Common Species
<i>T.chinensis var. nairei</i> Cheng et L. K. Fu
<i>Bretschneidera sinensis</i> Hemsl.
<i>Pseudolarix kaempferi</i> (Lindl.) Gord.
<i>Torreya grandis</i> Fort. et Lindl.
<i>T. jackii</i> Chun
<i>Zelkova schneiderana</i> Hand.-Mazz.
<i>Fagopyrum dibotrys</i> (D.Don) Hara
<i>Liriodendron chinense</i> (Hemsl.) Sarg.
<i>Magnolia officinalis</i> Rehd.et Wils
<i>M. officinalis ssp.biloba</i> Cheng et Law
<i>Cinnamomum camphora</i> (L.) Presl.
<i>Glycine soja</i> Sieb. et Zucc.
<i>O. henryi</i> Prain
<i>Toona ciliata var. pubesceus</i> (Franch.) Hand.-Mazz
<i>Trapa ineisa</i> Sieb. et Zucc
<i>Emmenopterys henryi</i> Oliv.

2.2.3 Associated biodiversity

Associated biodiversity includes: 5 species of wild fish, amphibians, snails allowed in paddies; 7 species of wild vegetables collected in borders of field; 62 forest species are used of which 21 as foods; 53 medicines; and wild cats, snakes.



2.2.4 Goods and services of the RFC system

The rice-fish system provides:

- food security (rice and fish production)
- quality nutrition and income generation (consumption and sale of fish)
- prevention of malaria (reducing mosquito by fish)
- conservation of biodiversity (rice, fish and associated species due to reduced use of pesticides)
- pest regulation (fish feeds on insects and cleans pathogen in water)
- Pollination (fish hits rice plants and helps the rice pollination)
- carbon and nutrient cycles (fish reduces residues of plants and recycle nutrient by excrement, azolla on the surface of the water also fixes nitrogen)

- soil and water conservation and restoration (rice fields retain water and harvest soil nutrient from the natural streams and canals)
- social importance (preservation of traditional human culture, local knowledge, institutions)

2.2.5 The people and the organisation of the community

About 60% of the people originating from the village are not living permanently in the place any more. Most of them are working overseas. Traditional practices take place in a larger ingenious water management system, around which the village organised itself to maintain canals, ditches and ponds. The local overseas Chinese establish a conservation organization called World Agricultural Heritage Conservation Centre which can collect the donation of the overseas of Qingtian County to do the conservation work. The village avails of a community building, where people meet, and where the office of the village committee is located. There is a good community or local organisation exists in the village.

2.3 Problems, Threats/Issues to be Addressed and Present Situation

2.3.1 Threats/issues to be addressed

The Rice-Fish agriculture system consists of many precious experiences and technologies. For example, people pour oil on the water to drown planthoppers, with help of local tools, so that fish can eat them. Other practices include returning-straw-to-land and nitrogen fixation etc. In a rotation of rice and fish, the fallow field left after the rice is harvested is used to raise fish. Generally, fish fry or fingerlings are stocked. After the rice harvest, the straw is left in the field. When the land is irrigated, the straw decays, which makes the water suitable for feeding adult fish. The fish component of the system is more profitable than the rice component. Generally, fish yields of are 300-450 kg/ha up to with maximum yields of over 1,500 kg/ha. Because it provides remarkable economic benefits, rotation of rice and fish is widely used in fallow winter fields, during the summer with green manure crops, for stocking fingerlings to produce table fish, and in seedling beds to stock fish fry for fingerling culture.

Studies have shown that the rice-fish farming area in China had increased from 667,000 ha in 1959 to 985,000 ha in 1986 and 1,532,000 ha in 2000⁵. However, it has decreased from 1,532,000 ha in 2000 to 1528,000 ha in 2001 and 1,480,000 ha in 2002. The rice-fish farming system is threatened by expansion of highly productive mono rice or fish systems, which include improved rice or fish varieties with excessive application of chemicals (especially pesticides for rice and antibiotic medicines for fish) in rice fields or fish ponds.

The food safety, ecological functions and environment conservation are seriously undervalued. With chemicals, rice growers do not need to depend on fish to regulate pests and recycle nutrition. The intensive fish culture produces much fish at a low cost to the market. During last 20 years, the total aquatic production in China has increased by 8.7 times, but the prices of aquatic products have increased by only 4.4 times. As a result, the benefits by raising fish in the rice fields over the mono rice production are diminishing.

During the two-year preparatory phase, a number of threats and issues to the system were identified. The main ones are listed below:

- Abandonment of the traditional cultivation and farming methods. This leads to: genetic erosion of indigenous agricultural biodiversity and loss of wild species associated with traditional agricultural systems.
- Conversion of land and habitat in and around traditionally managed fields to alternative uses such as unsustainable intensive farming, plantations, housing. The introduction of HYR varieties and related pesticides have undermined the association between rice varieties and carps, leading to losses in the diversity of domesticated and wild aquatic diversity.
- Policy emphasis. Agricultural development is to spread green revolution technology, dominated by sectoral approaches, with a subsequent lack of integrated and ecologically sustainable farming approaches. The importance of traditional management systems, forms of social organisation and

⁵ MoA. Unpublished fishery state.

customary law for the conservation and adaptive management of biodiversity is often poorly understood, leading to a tendency to replace these with national legal, institutional and cultural homogeneity. Low priority is given to in situ biodiversity conservation and local knowledge in development of agro-biodiversity conservation efforts by research, development and rural service organisations.

- Awareness and general attitude towards traditional systems. The State does not recognize importance of customary institutions and forms of social organization. Value of the indigenous and traditional agricultural systems that are critical for conservation and sustainable use of agricultural biodiversity of global significance are not recognized at the national level.
- International and national institutes and organisations tend to work on specific aspects of agricultural biodiversity and indigenous traditional agricultural systems; none so far take an integrated and coherent global approach to identify the most valuable systems and undertake the necessary work (scientific, political, economic and cultural) to promote their long term sustainability.
- Institutional capacity. State institutions do not have the knowledge, information, or tools to provide appropriate support to these agricultural systems nor do they have adequate mechanisms for involving indigenous and traditional communities in decision making.
- Community capacities. Indigenous and traditional farmers do not have the ability to develop appropriate responses to external pressures that can allow them to continue their unique agricultural practices (for e.g., tapping into niche markets for their products as an alternative to competing with products of homogenized agriculture, developing agricultural ecotourism).
- Market failure. Many services (beauty, water retention, biodiversity conservation, pride) by the system are not paid for. The hidden (subsistence) contribution and multiple benefits (including environmental) of traditional agricultural systems to the national economy are not monetised.



2.3.2 Vision of a dynamically conserved GIAHS systems

The project is to realise a dream of dynamic conservation and adaptive management of the RFC agricultural heritage system, including all other diverse RFC culture system in other counties/provinces. And also, other types of GIAHS existing in the country, promoting the conservation and sustainable use of agricultural biodiversity, associated biodiversity and landscapes while allowing the population communities to enjoy the full benefits of dynamically conserved GIAHS.

3 PROJECT FRAMEWORK

3.1 Project Goal, Objective and Development Objective

3.1.1 Overall project goal and objective

The overall project goal is to “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements” [cf. CBD: Article10(c)], specifically within agricultural systems.

The project objective is to promote conservation and adaptive management of globally significant agricultural biodiversity harboured in globally important agricultural heritage systems or GIAHS.

3.1.2 Development objective

To ensure food security, sustained livelihoods and reduce poverty of traditional agricultural farmers through dynamic conservation of agricultural heritage systems and promote sustainable use of agricultural biodiversity and associated biodiversity for sustainable agriculture and rural development.

This Development Objective is derived from the overall goal of the Global GIAHS programme. The programme promotes a “dynamic conservation” approach that:

- allows farmers to nurture and adapt the systems and biodiversity they have developed while still earning a living;
- supports protective government policies and incentives, while working for in situ conservation of biodiversity and traditional knowledge;
- recognises cultural diversity and the achievements of local community members and indigenous peoples;
- crystallizes the need for approaches that integrate the in situ conservation of genetic resources with related traditional knowledge and local technologies as a means to ensure continuous co-adaptation to changing environments and human pressures by maintaining the evolutionary dynamics of agricultural species in the human and agro-ecological sites in which they have evolved.

3.1.3 Specific objectives

- Enhance the national understanding and recognition of GIAHS by informing, raising awareness and mobilizing recognition of the national (and global significance) of GIAHS through local and national stakeholders and the public, also leveraging sustained institutional, financial and national policy incentives and support for their continued evolution;
- Demonstrate dynamic conservation in identified GIAHS and NIAHS (nationally important agricultural heritage systems) through development and testing of strategies and participatory methods for their dynamic conservation and sustainable management;
- Building the capacity of GIAHS farming communities and populations including local and national institutions to strengthen food security, reduce poverty and environmental sustainability i.e. engage constructive dialogue focusing on forward-looking strategies to reduce poverty in rural areas; motivate and strengthen rural and traditional farmers’ initiative and confidence to conserve and promote traditional agricultural systems and their biodiversity and associated biodiversity and landscapes; improve and support livelihood activities; also, diversification on income sources by exploring on-farm and off-farm opportunities; create institutional mechanisms geared towards sustainability and self-reliance of the GIAHS and its communities;
- Identify and assess documented (and undocumented) indigenous agricultural systems/practices and create national databases of existing traditional agricultural heritage systems, traditional knowledge systems and cultures; and
- Develop framework of national and local strategies or intervention strategies for implementing GIAHS dynamic conservation to strengthen and empower GIAHS traditional family and small holder farming communities.

3.1.4 Impacts

- The project will generate multiple ecological, social and economic benefits at local, provincial, national (and global) levels contributing to food and livelihood security, poverty alleviation and improve well-being of GIAHS traditional farming communities.
- Through dynamic conservation and adaptive management of the proposed GIAHS systems, the project will facilitate mainstreaming of GIAHS and its agricultural biodiversity conservation in national policy frameworks, ordinance and programs, thereby improving the capacity of the local and national stakeholders to promote sustainable use of agricultural

biodiversity, related biodiversity and landraces, taking into consideration the real and potential contribution to food security.

- Expected local and national benefits will arise from the conservation and adaptive management of globally significant biodiversity of importance to agriculture, including associated knowledge systems, and the maintenance of the ecosystem goods and services, including benefits that they generate e.g. soil health and soil biodiversity (soil quality, fertility, resilience), climate (adaptation in as much as these systems have greater resilience to climate change, and capacity to carbon sequestration), water (purity, recharge, availability) and air (purity, reduced wind erosion) as well as human life (food, nutrition, health, income, landscape, cultural diversity, aesthetics, recreation areas, and quality of life).



3.2 Expected Outcomes and Outputs

The proposed project will be implemented over a 6-year period with the expectation to generate the following outcomes and outputs as agreed by the local and national stakeholders.

3.2.1 Outcome 1: A nationally accepted system for recognition of NIAHS and for endorsement to GIAHS is in place

Through this outcome the project will aim to raise awareness at the national, provincial, local or community levels of the intrinsic value of GIAHS and the need to promote their long-term sustainability. The underlying strategy for identifying and managing GIAHS will be to avoid or reverse the loss or degradation of essential features and attributes of these systems especially their biodiversity and culture values while allowing their necessary evolution and enhancing the socio-economic development of resource users and national benefits. This will require careful consideration of the critical issue of how to meet often-conflicting goals of conservation and development, for instance avoiding creating “ethno-museums” where preserving the key characteristics of the systems might extinguish their human vitality. This is a challenge that requires innovative and adaptive approaches, which the project will devise, develop and demonstrate in the pilot sites.

3.2.2 Outcome 2: The conservation and adaptive management of globally significant agricultural biodiversity harboured in GIAHS is mainstreamed in the national sectoral and inter-sectoral plans and policies

The focus of this outcome will be on ensuring that key sectoral and inter-sectoral policies, ordinances and plans (such as policies on agriculture, water, environment, tourism and cultural heritage, in situ conservation of genetic resources for food and agriculture, agricultural extension, public participation, indigenous peoples, traditional knowledge systems, access to natural resources, market development) take explicit account of the significance of GIAHS.

3.2.3 Outcome 3: Globally significant agro-biodiversity in pilot sites and systems is being managed and sustainably used by empowering local communities and harnessing evolving economic, social, and policy processes and by adaptation of appropriate new technologies that allow interaction between ecological and cultural processes

The outcome will address the obstacles for long-term sustainable management of GIAHS and will help the people living in and around GIAHS to establish strengthened food security, socio-political (governance) and economic processes (markets and alternative livelihood opportunities) that help them address the challenges of today’s world (with all its modern pressures) and let them to take

advantage of the opportunities of modern society, while at the same time maintaining the remarkable values (and co-evolving processes) of their agro-ecosystems.

The strategy for this outcome explicitly recognises that change in "traditional" political, social and economic processes is inevitable; they cannot be frozen or re-created. Consequently, it adopts the "adaptive management" approach to explore and develop novel political, social and economic processes that strengthen the existing management systems, and which generate the same biodiversity outcomes as much as possible— that is, conserve races, species and agro-ecosystems goods and services. Thus, the processes may be different and contain new and modern elements, but the way they interact with the biophysical and social-economic world will maintain the biological and cultural values of these agro-ecosystems. The project has identified initially the traditional rice fish agriculture to test such new approaches. Considering the diverse rice-fish culture systems exist among provinces and ethnic minority groups, an associated site is also identified. This will be further expanded to cover other regions with diverse rice-fish culture systems, and also to identify other new systems. The RFC culture pilot site is in Longxian village of Zhejiang Province, and the associated site is in Congjiang County, Guizhou Province. Further sites and new systems will be identified and assessed as NIAHS and GIAHS.



3.2.4 Outcome 4: Lessons learned and best practices from promoting effective management of pilot site are widely disseminated to support expansion and upscaling of the NIAHS and GIAHS in other counties/provinces and creation of the NIAHS and GIAHS network

The strategy for this outcome will actively monitor the progress at all levels and summarize lessons learned for wide dissemination through various channels, including newsletters, webpage. The research and exchange on traditional agricultures will be fostered through workshops and small grants. The project will also provide training and guidance for local governments to apply for NIAHS, and establish a national network of NIAHS for sharing of experience.

3.3 Outline of Planned Activities to Achieve Project Outcomes/Outputs

The following activities for dynamic conservation of GIAHS are in response to the issues identified by the local and national stakeholders during the inception and succeeding workshops conducted during the 2-year preparatory phase of the project.

3.3.1 Outcome 1: A nationally accepted system for recognition of NIAHS and for endorsement to GIAHS is in place

Activity 1.1: Formulation of the MoA and MoC ordinance on the NIAHS definition, criteria and procedure for NIAHS designation and for endorsement to GIAHS, eco-labelling system and access to niche market.

Activity 1.2: Establishment of the National GIAHS Committee with its Secretariat in MoA and National GIAHS Science and Technology Committee with its Secretariat in CAS to evaluate, approve and endorse a new system for national recognition and for global endorsement.

Activity 1.3: Development of criteria, guidelines and indicators through agricultural heritage inventory, networking and workshops and other fora to support national recognition and designation of NIAHS/GIAHS.

Activity 1.4: Establishment of a sustainable financing mechanisms and innovative institutional support for consolidating and expanding pilot sites, networks of sites and systems.

3.3.2 Outcome 2: Conservation and adaptive management of globally significant agricultural biodiversity harboured in GIAHS is mainstreamed in the national sectoral and inter-sectoral plans and policies.

Activity 2.1: Review of existing plans, policies, ordinances and regulatory frameworks affecting conservation of GIAHS.

Activity 2.2: Harmonisation of national policies and actions, and amendments to key sectoral and inter-sectoral policies and plans in agriculture, forestry, water, environment, culture and tourism to support GIAHS dynamic conservation.

Activity 2.3: Integration of national and local policies to capture new opportunities arising from GIAHS designation (incentives and benefit sharing for agricultural biodiversity conservation, IPM, conservation agriculture, access to niche markets, payment for environmental services, etc)

Activity 2.4: Review and improvement of local institutions and norms governing access and use of resources, decision-making and involvement, with a view to empower NIAHS and GIAHS communities and further mobilising their positive innovations and incentive measures to conserve and sustain their agricultural biodiversity and systems.

3.3.3 Outcome 3: Globally significant agricultural biodiversity in pilot sites and systems is being managed and sustainably used by empowering local communities and harnessing evolving economic, social, and policy processes and by adaptation of appropriate new technologies that allow interaction between ecological and cultural processes

For this Outcome, the design, and implementation of program activities shall be based on the following activity topics:

Activity 3.1: Conservation and sustainable use of natural capital (agro-biodiversity, water, forest, soil, carbon sequestration)

- a. Identifying, respecting and strengthening community norm for conservation (sacred places, fish nests, sacred species, etc)
- b. Screening and testing local practices, innovations, technologies (e.g. selection and improvement of germplasm, practices for enhanced nutrient cycling and pest/disease control drawing on scientific research and local traditional knowledge systems) that improve management and productive capacity of agro-ecosystems, their traditional and new co-evolved cultivars and breeds.
- c. Demonstrating the best practices of adaptive management and implement dynamic conservation that maintain visual landscapes and the main elements of agricultural system while enhancing in situ conservation, evolution and sustainable use of important agricultural biodiversity as well as agricultural productivity, income and food security.

Activity 3.2: Development of economic and livelihoods opportunities

- a. Eco-labelling schemes and niche market development (organic food certification, green food certification, safe food certification, geographic indicator for origin of product) .
- b. Agricultural eco-tourism (healthy food and balanced diet, Chinese medicines, clean environment, participation of visitors in traditional practices, beautiful landscape, etc).
- c. Payment for environmental services (monitoring and linking to new opportunities, e.g. incentives for biodiversity, clean water, land conversion programme, etc).

Activity 3.3: Promotion of social capital and cultural heritage

- a. Establishment of multi stakeholder processes and structures at the pilot sites and systems (e.g. Longxian village GIAHS association) to support collaborative and participatory management and promotion of GIAHS.
- b. Training/capacity building of farmers on adaptive management for enhancing food and livelihood security through increased agricultural production, marketing/enterprising skills, diversification of income generation compatible with dynamic conservation of GIAHS and preservation of ecosystems functions and services.
- c. Promotion and reviving of cultural expressions and teaching them in schools (agriculture, folklore, food, water, architecture, stone carving, linkages to overseas Chinese, village museum).



Activity 3.4: Policy coordination and support

- a. Link GIAHS with existing policies and ordinances (national and international), new socialist country side (circular economy, sustainable development policy, people-based scientific policy, harmonious society, environmental protection, poverty reduction, support development in minority/indigenous groups, etc).
- b. Link GIAHS with existing movements/programmes (ecological agriculture, ecological province/county/city, Intangible Cultural Heritage, UNCCD activities, infrastructure construction, sanitation improvement and others).

Activity 3.5: Assessment of agricultural heritage systems and policy interventions

- a. Inventory and establishment of list and databases of agricultural heritage systems.
- b. Documentation of traditional knowledge systems.
- c. Study of policy interventions affecting dynamic conservation of GIAHS and traditional farmers, and minority groups.
- d. Study of agricultural heritage systems, culture of minority peoples and the driving force of traditional agricultural systems/practices shrinking.

3.3.4 Outcome 4: Lessons learned and best practices from promoting effective management of pilot site are widely disseminated to support expansion and up-scaling of the NIAHS and GIAHS in other counties/ provinces and creation of the NIAHS and GIAHS network

Activity 4.1: Disseminating successful experiences of pilot and associate sites/systems through various channels, e.g. forums and festivals, especially on “National Cultural Heritage Day”.

Activity 4.2: Preparation of national GIAHS newsletters (bi-lingual) as well as scientific reports and publications on lessons learned and best practices emerging from the NIAHS and GIAHS sites.

Activity 4.3: Provision of guidelines and training courses for application and designation to NIAHS/GIAHS.

Activity 4.4: Provision of small research grants and organization of academic symposiums to encourage inter-disciplinary research on adaptive management and conservation of GIAHS.

Activity 4.5: Implementation of the project M&E plan at local and national levels.

Activity 4.6: Establishment of GIAHS/NIAHS networks to facilitate information exchange, dialogue and cross-visits of project sites.

Activity 4.7: Creation and maintenance of a web-based information management system that will include a database of existing and potential NIAHS and GIAHS; system also designed to serve as an electronic forum for sharing information and experiences across the various sites and systems and connected to the mother GIAHS webpage.

4 SUSTAINABILITY

4.1 Institutional Sustainability

The GIAHS pilot system and pilot sites (and sites/systems to be selected) are prepared through the participation of key stakeholders (ranging from the local to national levels), and this approach will be used in project implementation to ensure sustainability and maintain ownership at pilot sites (and systems). Local communities and minority groups are involved in the planning, development, capacity building and co-management of the GIAHS systems. The project will establish institutional mechanisms in pilot sites that bring together customary and state institutions for shared management of GIAHS. National ministries, institutions, academes and local county governments shall have substantive role according to their respective field of specialisations and mandates/functions (*inter alia* research, policy-making, administration, extension, education and business development). Long-term institutional support will also be assured inasmuch as the project will integrate/ mainstream the GIAHS concept into national strategies for conservation, sustainable agriculture and rural development. This will ensure that there are supportive government actions, both in terms of an enabling environment and in terms of support to national research and development agenda that will contribute to institutional and financial sustainability of the project.

4.2 Financial Sustainability

At the international level, the FAO-GPIU under the Natural Resources, Environment, Bioenergy and Climate Change Division of the Natural Resources Department shall be in charged for the global project cycle financial support plan. FAO-GPIU will assist pilot country in the mobilization of resources from prospective donors for GIAHS initiative.

At the national level, the project will not only integrate GIAHS into existing national strategies for conservation, sustainable agriculture, and rural development, but also mobilize national budgetary resources to support the concept.

At the site level, the added economic value and generation of income for local communities through increased market access based on the appeal of the GIAHS “brand” for “real food” advocates will generate resources in the long-term for continuation of these systems.

4.3 Social and Ecological Sustainability

GIAHS, by definition, provide outstanding ecological benefits (such as refuge for globally significant agricultural biodiversity and the maintenance of resilient ecosystems) and socio-cultural benefits (such as preservation of valuable traditional knowledge and cultural practices, preserving a certain quality of life that keeps a close link with the natural environment). With multiple livelihood and ecological values listed above, the traditional rice-fish system is a remarkable model of the biodiversity-enhancing agriculture. There is potential to build on this heritage for balancing the shortcomings of the chemicals-based agriculture and developing ecosystem approaches to managing wetlands and flood plains. Support and collaboration from local communities, local governments and Ministry of Agriculture for demonstrating RFC (and associated sites, and other systems as NIAHS/GIAHS) as GIAHS is confirmed. At national and local levels critical importance is given to the linkages between achieving rural development benefits for GIAHS communities (socio-economic sustainability) and conservation and sustainable use objectives (ecological sustainability).

5 IMPLEMENTATION AND MANAGEMENT STRUCTURE

5.1 Target Beneficiaries and Stakeholders' Involvement

Target beneficiaries are local farmers of traditional rice fish farmers of Longxian village and other village/counties, and other provinces practicing RFC system with associated/complementary sites, and other traditional farmers of the selected NIAHS/GIAHS.

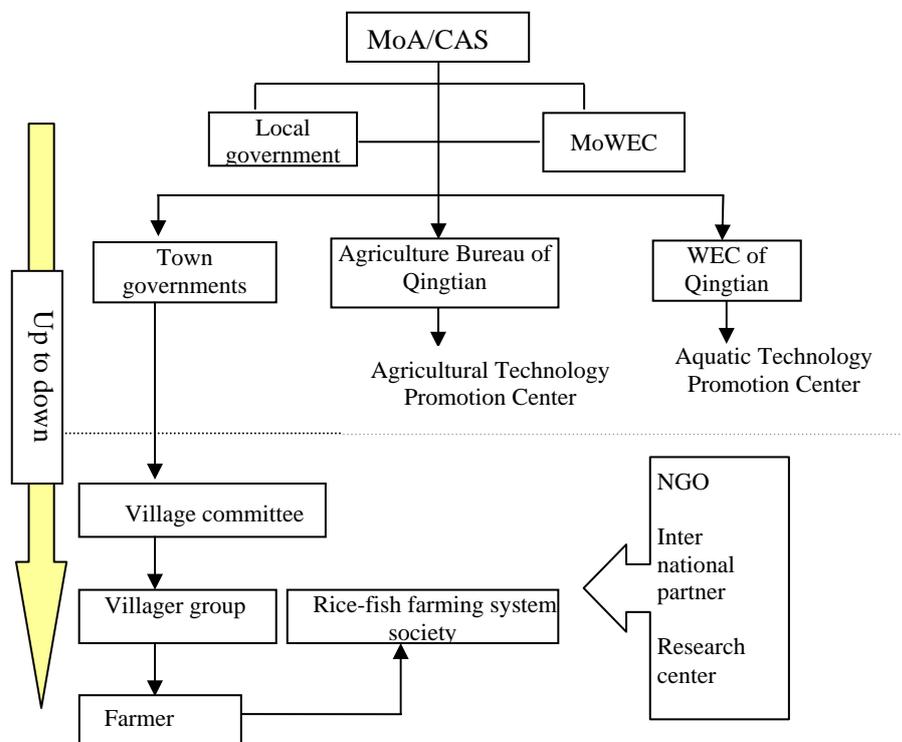


Figure1. Cooperation structure of the national GIAHS project.

Figure 1 shows the variety of stakeholders involved in conserving the rice-fish agriculture system, and a set of programmes will be set down to monitor and evaluate the system conservation. The members of the team constitutes of: Government authorities, local government, local organizations, University and research institute, NGOs, and International partners. They follow an up to down managing mechanism. MOA in close coordination with CAS (as the NFPI) takes charge of the facilitation on the whole, local government, the NGOs, International partner, universities and research centres provide the various support for the conservation of the GIAHS.

5.2 Coordination Mechanism across Levels and Task Areas

The project will be coordinated by a National Project Facilitator under the supervision of the National Focal Point Institution (NPFPI). At each pilot site, a “local focal point organisation or coordinating stakeholder”, who keeps an overview of a particular aspect of the GIAHS project in the pilot site, shall be designated to facilitate/coordinate with other local collaborating organisations/institutions. Such coordinating stakeholders may coordinate one particular level (e.g., the county level), or they may coordinate one particular task area of the programme (e.g., the site designation system, the niche marketing initiative, or the scientific underpinning of the project). The coordinating stakeholder will allocate personnel and will make a work plan as part of their own planning. Other participating stakeholders will allocate some personnel, to implement the part of the plan they take responsibility for. At the national level, CAS in close coordination with MoA is the coordinating organisations. They will prepare a work plan for the national component. At county level, Qingtian County (or in other areas other counties, e.g. Congjiang County) will be the coordinating organisation, and the county will incorporate GIAHS in its annual work plans. And at community

level, farmers will be organised and establish a GIAHS committee or association in order to implement the local project. The National Project Facilitator will formally communicate across levels and task areas.

The national project distinguishes three management levels: the National level, the provincial / county level, and the community level. Each level has a separate mandate in support of activities at other levels. Annex 7 shows the different levels of activity.

5.2.1 Community level

At local level, the traditional farming communities of Longxian of Qingtian County and other counties (associated sites e.g. Congjiang, and other townships) are the key implementors and actors in dynamic conservation of the rice-fish culture. Their prime motivation will be the creation of economic and livelihood opportunities, preservation of their identity, and recognition of their cultural heritage while conserving and promoting their rice-fish culture agricultural heritage system.

5.2.2 County and provincial level

The GIAHS communities will work closely with the meso-level authorities; the Qingtian County Government; the Bureau of Agriculture, Bureau of Aquaculture, Bureau of Culture, etc. The main mandate of these bureaus is to support agriculture technical development for rural economic development. With the GIAHS project, local ordinances and national policies relevant to dynamic conservation of GIAHS shall be reviewed, assessed and recommend for amendment. The local county government and the provincial



government of the selected pilot sites/systems, MoA, MoW, MoC will work closely at provincial level for the conservation and adaptive management of GIAHS. The key stakeholders in the Provincial level together with the representatives from the national level can select more counties to participate in the GIAHS programme following the designated criteria and procedural steps of endorsement for NIAHS/GIAHS designation.

5.2.3 National level

The national level project is formally coordinated by the Ministry of Agriculture (MoA); day-to-day management of the national level project will be the responsibility of the National Focal Point Institution (Chinese Academy of Sciences or CAS). CAS will, under supervision of MoA, mobilise national level stakeholders to realise stipulated project outcomes. Administrative and other logistic support shall be provided by the FAO country office while direct coordination and technical support necessary for the operationalisation and implementation of the project activities shall be provided by the FAO-GPIU.

6 OVERSIGHT, MONITORING AND EVALUATION, MANAGEMENT INFORMATION AND REPORTING

6.1 Oversight and Reviews

National Review Meetings: The project will undertake annual review meetings. These meetings, with the first one planned for the initiation of the project implementation, will undertake overall project review responsibilities. At the local/community level, local stakeholders' annual review shall be held and will be attended by the National Project Facilitator and other representatives from the key

national organisational bodies with stake to the project. At the national level annual review meetings, participants are:

- National Focal Point Institution (NFPI)
- National Project Facilitator
- FAO Country Office Representations
- GPIU Project Manager or Technical Officer (FAO-Rome), if need be.
- Key partner organisations including UNU, local and national stakeholders (identified as relevant to the agenda of the meeting).

6.2 Monitoring and Knowledge Sharing

The Project Management and Implementation Arrangement including the Reporting and Feedback structure will allow the integration of an on-going integral Project Operation M&E for all activities related to the project and with other pilot systems..

6.3 Reporting Schedule

- a) Local level/Community Group/Farmer's Association through their representative (Local Facilitator) shall submit operational reports (including feed backs) to their National Project Facilitator who will review and submit to the National Focal Point Institution.
- b) The National Project Facilitator will prepare and submit Quarterly Reports (work plans, operational reports including administrative and financial matters) to the National Focal Point. This report should be transmitted to FAO Country Office and to the FAO-GPIU.
- c) The Quarterly Report should be submitted using the FAO Standard Format, will include but not limited to the following:
 - Report on the actual implementation of project activities based on the agreed work plan and timeframe
 - Progress towards achievement of immediate objectives and outputs
 - Identification of any problems and constraints (physical, technical, human, financial, others that may arise)
 - Recommendations for corrective measures
 - A detailed work plan for the following reporting period

In the concluding months of the project, a draft Terminal Report will be made available by the National Project Facilitator with the overall supervision and assistance by the Chinese Academy of Sciences as the National Focal Point Institution and FAO Country Office. This will be submitted to the FAO-GPIU. The report should contain assessment of which of the projects' scheduled activities have been carried out, the outputs produced, the progress towards achievement of the immediate Objectives and related Development Objective, and will also present recommendations for any future follow-up action arising out of the project. Upon completion of the project duration, it will be finalised and submitted to the MoA, FAO and with copies from the local and national Government organisations.



Annex 1. China Project Logical Framework

Project Strategy	Objectively verifiable indicators				
Goal	To “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements” [cf. CBD: Article10(c)], specifically within agricultural systems				
	Indicator	Baseline	Target	Sources of verification	Assumptions and Risks
<p><u>Project objective</u> To promote conservation and adaptive management of globally significant agricultural biodiversity harbored in globally important agricultural heritage systems or GIAHS.</p>	<p>Establishment of national enabling environment for GIAHS</p>	<p>CBD Articles 8(j) and 10(c), and the Cultural Landscape Category of World Heritage Convention, and other relevant national policies that will provide starting points for a national policy framework, implementation system and funding mechanism for GIAHS</p>	<p>Accepted national policy formulated to recognise and promote the conservation and adaptive management of GIAHS and designate sites of national importance.</p> <p>GIAHS consideration adopted in other key policies and legislation.</p> <p>Creation of a nationally recognised GIAHS interim Committee and Secretariat with a statutory mandate by the end of the project that will encourage formal recognition and designation of NIAHS</p> <p>Establishment of a sustainable funding mechanism for the long term program</p>	<p>Documentation from competent national and local bodies supporting GIAHS designation (MoA, MoC, MoW, MoST, etc).</p> <p>Existence of National GIAHS Secretariat and meeting reports</p> <p>Audited accounts and reports from financial mechanism</p>	<p>GIAHS is based on a holistic concept of agricultural systems; this carries the risk that its application will be given different interpretations in each of the pilot systems. China is willing to designate, support and promote GIAHS concept in her territory</p> <p>Collaboration among national GIAHS secretariat, governments and other stakeholders is achieved in order to create a national policy environment conducive for GIAHS</p>
	<p>Establishment of project implementation structure for GIAHS</p>	<p>Ministries responsible for Agriculture, Water, Environment, Culture, Tourism and CAS are involved in various aspects of implementation of GIAHS</p>	<p>CAS is set up as National Focal Point Institution (NFPI) with endorsement of MoA to promote the GIAHS concept and develop best practice for their designation and management.</p>	<p>National Reports to FAO-GPIU with respect to implementation of GIAHS.</p> <p>Government publications</p>	

	Improvement of GIAHS conservation and adaptive management	Pilot sites face three key barriers for conservation and sustainable management of GIAHS: (i) insufficient benefits; (ii) indiscriminate transfer of inappropriate technology; (iii) access to markets.	The key barriers to conservation and management in pilot sites are significantly reduced or removed. GIAHS operate without external financial assistance and key indicators for extent and biodiversity are achieved	Reports from M&E surveys Case history reports from Outcome 3 Scientific publications from Outcome 4	
	Tracking tool BD 2	The pilot site of GIAHS-RFC cover 461 ha of land having significant agricultural biodiversity value	<p>3 other potential GIAHS-RFC in China identified in accordance with internationally accepted criteria</p> <p>Hectares of land managed in accordance with GIAHS-RFC definition and criteria: 7, 000 ha</p> <p>9 new systems of potential GIAHS identified in accordance with internationally accepted criteria.</p> <p>Hectares of land of new systems managed in accordance with GIAHS definition and criteria: 90, 000 ha or more</p> <p>20 systems of potential NIAHS identified in accordance with nationally accepted criteria.</p> <p>Hectares of land of 20 NIAHS managed in accordance with NIAHS definition and criteria: 120, 000 ha or more</p>	Reports from M&E surveys National Reports to FAO-GPIU with respect to implementation of GIAHS.	

Outcome 1: A nationally accepted system for recognition of NIAHS and for endorsement to GIAHS is in place	Official ordinance of MoA and MoC regarding the NIAHS definition, criteria and procedure of designation and endorsement, access to niche market and use of GIAHS label	Nil	By project end MoA and MoC in collaboration with relevant ministries and technical support of CAS issues ordinance for conservation and adaptive management of GIAHS	Project reports Copy of the ordinance	National policy processes are influenced by many factors, and are generally lengthy. Accordingly, not all national organisations may be able to provide the desired endorsements for GIAHS within the project period. It is assumed, however this will be achieved through the work programme and joint efforts of MoA, MoC and CAS.
	Establishment of national GIAHS Committee with Secretariat in MoA Establishment of national GIAHS Science and Technology Committee with Secretariat in CAS	Nil	By project end national GIAHS Committee will form with Secretariat in MoA By project end national GIAHS Science Committee will form with Secretariat in CAS	Project reports Minutes of the national GIAHS Committee Minutes of the national GIAHS Science Committee	
	Number of NIAHS receiving national recognition	Nil	30 systems, including 10 GIAHS	Project reports Statements of the national GIAHS Committee Communications from FAO-GPIU	

	Establishment of a sustainable financing mechanism and institutional support for consolidating and expanding the GIAHS approach as a long-term open-ended program	US\$ 1.7 million	Sustainable finance mechanism in place	Written commitments by MoA and relevant ministries	
Outcome 2: The conservation and adaptive management of globally significant agricultural biodiversity harboured in GIAHS is mainstreamed in sectoral and inter-sectoral plans and policies	Amendments to key sectoral and inter-sectoral policies and plans	Identified policies and plans do not make explicit reference to GIAHS	By project end amendments have been approved to following: Agricultural Technology Extension Policy Payment of environmental services NBSAP Protected Area Legislation Intangible Cultural Heritage Ordinance Agricultural Law Forest Law Grassland Law	National govt. official publications	政府的调整 and 变化可能会延迟政策的实施。然而，希望新的政府也能够兑现以前政府的承诺
	Level of government support to GIAHS	No government support explicitly to the concept of GIAHS	At least 1-2 ministries are dedicated to champion the concept of GIAHS	National govt. official publications	
Outcome 3: Globally significant agricultural biodiversity in pilot GIAHS is being managed and sustainably used by empowering	No further decline in land conversion and land abandonment pressures on traditional farms of RFC and other 29 potential systems	461 ha (RFC)	7,000 ha (RFC) Hectares of land of 9 new systems managed in accordance with GIAHS definition and criteria: 90, 000 ha or more Hectares of land of 20 NIAHS managed in accordance with NIAHS definition and criteria: 120, 000 ha or more	Annual field surveys using rapid assessment of land cover change methods	Macro-economic drivers and natural hazards, socio-economic and environmental changes (e.g. climate change) may disrupt progress in some pilot GIAHS. Local communities

local communities and harnessing evolving economic, social, and policy processes and by adaptation of appropriate new technologies that allow interaction between ecological and cultural processes (Local)	Decline in land conversion pressure on surrounding habitats	Baseline to be quantified in the first year	Habitat networks surrounding traditional farms remain stable or increase compared to baseline levels	Annual field surveys using rapid assessment of land cover change methods	and key stakeholders will engage in the pilot management projects for GIAHS
	Level of understanding and commitment of communities to GIAHS in the pilot sites	90% of farmers are estimated to observe management practices supportive of GIAHS criteria	No decline in percentage	Project reports	
	Number of traditional crops and varieties being cultivated	20 native varieties of rice 6 native breeds of carp Other associate crops and animal species	By project end, numbers are stable or increase over baseline	Annual field surveys	GIAHS is based on a holistic concept of agricultural systems; this carries the risk that its application will be given different interpretations in each of the pilot systems. China is willing to designate, support and promote GIAHS concept in their territories Collaboration among GIAHS secretariat, governments and other stakeholders is achieved in order to create a national policy environment conducive for GIAHS

<p>Outcome 4: Lessons learned and best practices from promoting effective management of pilot GIAHS/NIAHS are widely disseminated to support expansion and upscaling of the GIAHS/NIAHS in other areas and creation of the GIAHS/NIAHS network (National, Local)</p>	<p>Expressions of interest from other GIAHS/NIAHS from around China to apply the project approach, along with commitments to provide co-financing</p>	<p>Nil</p>	<p>At least 9 proposals by end of year 4 and 20 proposals by end of project</p> <p>Number of GIAHS/NIAHS increase from 1 to 30</p>	<p>Project reports</p>	<p>Project outcomes are achieved and result in demand from other areas</p>
	<p>Interest from academic and research institutes in analyzing and further study of experience in pilot sites and included in small programme of MoST</p>	<p>Nil</p>	<p>At least 200 proposals/ scientific publications and 24 scientific forums by project end</p> <p>Participants of the GIAHS/NIAHS network increase year by year</p>	<p>Project reports</p>	
	<p>Publicity</p>	<p>Nil</p>	<p>35 mentions in media by end of the project</p>	<p>Media reports</p>	
	<p>Usage of electronic forum and database by interested stakeholders</p>	<p>Measure usage of website in year 1</p>	<p>Increase in usage by at least 100%</p>	<p>Web-site counter</p>	

Annex 2a. Estimated budgetary expenditures (GEF and other Co-funding Sources)

Outcome	Planned activities	Estimated cost (USD)		Total
		GEF	Co-funding	
Outcome1	Activity 1.1 Formulation of the MoA and MoC ordinance	10,000		10,000
	Activity 1.2 Establishment of the National GIAHS Committee with its Secretariat in MoA and National GIAHS Science and Technology Committee with its Secretariat in CAS	30,000	30,000	60,000
	Activity 1.3 Development of criteria, guidelines and indicators	70,000	40,000	110,000
	Activity 1.4 Establishment of a sustainable financing mechanisms and innovative institutional support	4,000		4,000
Outcome2	Activity 2.1 Review of existing plans, policies, ordinances and regulatory frameworks affecting conservation of GIAHS.	5,000	5,000	10,000
	Activity 2.2 Harmonisation of national policies and actions, and amendments to key sectoral and inter-sectoral policies and plans in agriculture, forestry, water, environment, culture and tourism	30,000	30,000	60,000
	Activity 2.3 Integration of national and local policies to capture new opportunities arising from GIAHS designation	20,000	25,000	45,000
	Activity 2.4 Review and improvement of local institutions and norms governing access and use of resources, decision-making and involvement	40,000	10,000	50,000
Outcome3	Activity 3.1 Conservation and sustainable use of natural capital	40,000	120,000	160,000
	Activity 3.2 Development of economic and livelihoods opportunities	5,000	100,000	105,000
	Activity 3.3 Promotion of social capital and cultural heritage	40,000	70,000	110,000
	Activity 3.4 Policy coordination and support	10,000	290,000	300,000
	Activity 3.5 Assessment of agricultural heritage systems and policy interventions	50,000	20,000	70,000
Outcome4	Activity 4.1 Disseminating successful experiences of pilot and associate sites/systems	10,000	40,000	50,000
	Activity 4.2 Preparation of national GIAHS newsletters (bi-lingual) as well as scientific reports and publications	33,000	50,000	83,000
	Activity 4.3 Provision of guidelines and training courses for application and designation to NIAHS/GIAHS.	13,000	30,000	43,000
	Activity 4.4 Provision of small research grants and organization of academic symposiums	30,000	70,000	100,000
	Activity 4.5 Implementation of the project M&E plan at local and national levels.	30,000	70,000	100,000
	Activity 4.6 Establishment of GIAHS /NIAHS networks	10,000	100,000	110,000
	Activity 4.7 Creation and maintenance of a web-based information management system	20,000	100,000	120,000
Total		500,000	1,200,000	1,700,000

Annex 2b. Proposed Work Program and Time Frame of Project Activity Implementation (2007-2012)

Planned Activities		Year					
		1	2	3	4	5	6
Activity 1.1 Formulation of the MoA and MoC ordinance	interim						
	final						
Activity 1.2 Establishment of the National GIAHS Committee with its Secretariat in MoA and National GIAHS Science and Technology Committee with its Secretariat in CAS							
Activity 1.3 Development of criteria, guidelines and indicators	interim						
	final						
Activity 1.4 Establishment of a sustainable financing mechanisms and innovative institutional support							
Activity 2.1 Review of existing plans, policies, ordinances and regulatory frameworks affecting conservation of GIAHS.							
Activity 2.2 Harmonisation of national policies and actions, and amendments to key sectoral and inter-sectoral policies and plans in agriculture, forestry, water, environment, culture and tourism							
Activity 2.3 Integration of national and local policies to capture new opportunities arising from GIAHS designation							
Activity 2.4 Review and improvement of local institutions and norms governing access and use of resources, decision-making and involvement							
Activity 3.1 Conservation and sustainable use of natural capital							
Activity 3.2 Development of economic and livelihoods opportunities							
Activity 3.3 Promotion of social capital and cultural heritage							
Activity 3.4 Policy coordination and support							
Activity 3.5 Assessment of agricultural heritage systems and policy interventions							
Activity 4.1 Disseminating successful experiences of pilot and associate sites/systems							
Activity 4.2 Preparation of national GIAHS newsletters (bi-lingual) as well as scientific reports and publications							
Activity 4.3 Provision of guidelines and training courses for application and designation to NIAHS/GIAHS.							
Activity 4.4 Provision of small research grants and organization of academic symposiums							
Activity 4.5 Implementation of the project M&E plan at local and national levels.							
Activity 4.6 Establishment of GIAHS /NIAHS networks							
Activity 4.7 Creation and maintenance of a web-based information management system							

Annex 3. Assessment of Opportunities, Problems, Options and Actors at Local and National Levels

1. GIAHS-Enabled Community Development Opportunities

1.1 Community level opportunities

Farmers of Longxian have, during the inception phase worked with a few opportunities through the GIAHS initiative. They include:

- Niche market development for locally grown and processed fish
- Eco-tourism development
- Preservation of culture and agro-biodiversity
- Recognition of the rice-fish culture as GIAHS

During the pilot phase, the project will support and upscale the opportunities for the farmers. For each opportunity, the project will develop a coherent set of activities, across actors and levels, in order to enable the farmers to realise the opportunity. Activities and actors for each opportunity will be identified through a condition-outcome chain.

1.2 Niche market development and problems to be addressed for local labelled GIAHS fish

Longxian farmers are, with help of the County government, marketing their smoke-dried fish as “GIAHS fish”. The villagers developed a market with overseas Qingtian Chinese, who pay good prices for GIAHS labelled fish (up to four times more than fish harvested from non-GIAHS site). At present, there are several problems that need to be addressed by the project:

- (1) Farmers can sell much more than Longxian produces. Therefore, farmers may have to buy fish from neighbouring villages that have no GIAHS designation.
- (2) The GIAHS designation criteria and/or labelling using “GIAHS”.
- (3) The GIAHS label is not yet protected. Every fish farmer in China can claim he/she grows GIAHS fish.

For niche marketing to work as a GIAHS supportive instrument, the programme needs an efficient labelling system, which includes quality criteria and control, and an organisation to label such fish. Some activities for the development of a labelling system will thus include:

- *Villagers* need to organise into an organisation that ensures GIAHS quality criteria for GIAHS labelled fish. For that, the community needs support of county-level players, such as the county government. The villagers will need to be trained in Integrated Pest Management, as to improve the quality of their products. For that, the villagers will need technical support from all levels .
- The *county government* is responsible for the establishment of a local system to label and protect GIAHS fish. For that, the county government needs a legal base for the GIAHS label, and an organisation to coordinate quality control as well as control of non-legal use of the label. For that, the county needs support from national-level actors that set GIAHS quality criteria and the mandate and capacity to set up such an organisation.
- At *national level*, MoA in close cooperation with CAS will develop the GIAHS product quality criteria. CAS will coordinate with an organisation with an established labelling system (for example, Organic food certification (SEPA); Green food certification (MoA); Safe food certification (MoA)). For this, MoA and CAS will need to coordinate with FAO to define the GIAHS concept And product quality standards

1.3 Eco-tourism development

The pilot GIAHS status of the village has been utilised by the community to popularise its presence in local media; and they constructed a rice-fish statue at the village entrance. As a result, the village gets many guests – scientists, who study the villages’ socio-ecological characteristics, tourists from the region, and overseas family members. One family opened a restaurant serving the local fish dish. Ecotourism thus holds opportunities for livelihood development. Some of the problems associated to this and should be addressed are:

- (1) In absence of GIAHS designation criteria, villagers build non-typical houses at the cost of local traditional architecture, which infringes on the “heritage” experience.
- (2) Only few households profit from the eco-tourism activities.
- (3) The activities are intimately linked to the present GIAHS programme. They are not embedded in a larger ecotourism initiative.

The ecotourism initiative can help sustaining the rice-fish culture, if a supporting ecotourism programme is developed. For this, the following condition-outcome chain needs to be developed.

- *Villagers* need to organise into an organisation that ensures the GIAHS experience in their village. Longxian on its own is unlikely to attract a sustainable stream of tourists – the carrying capacity and attraction in the long run is too low. Therefore Longxian as an ecotourism destination needs to be embedded in a county or provincial level initiative. For that, the community needs support of county-level players, such as the county government.
- The *county government* can organise a county-level ecotourism programme. The county will need to develop an ecotourism plan, with the county GIAHS programme as a major component. A GIAHS programme with several GIAHS sites will be supportive to an ecotourism plan (see Section 1.5). For that, the county needs support from national-level actors that set GIAHS quality criteria and the mandate and capacity to set up such an organisation.
- At *national level*, it is MoA in close cooperation with CAS that is to develop the GIAHS product quality criteria. CAS is to coordinate with an organisation with an established labelling system (for example, Organic food certification (SEPA); Green food certification (MoA); Safe food certification (MoA)). For this, MoA and CAS will need to coordinate with the FAO on the GIAHS concept and product quality standards.

The development of a GIAHS label will be carried out as follows. CAS / MoA choose, in close co-ordination with the label co-ordinators, one of the existing food labelling systems to link the GIAHS label to. Apart from the existing label (for instance “Green Food”), the product can then also be labelled as “From Longxian Agricultural Heritage Site”. At upscaling of the GIAHS initiative, the GIAHS label will be renamed accordingly. For example, products from Congjiang can be labelled “Green Food from Congjiang Agriculture Heritage Site”. In that way, a certified quality can be assured, as well as the GIAHS origin of the food or geographic indicators.

1.4 Preservation of culture and agro-biodiversity

The preliminary GIAHS designation has invoked a feeling of pride to the Longxian community. The community is learning to appreciate its own cultural heritage. Some farmers are searching for old rice-varieties in neighbouring villages, and re-introducing them. Yet, a few problems exist:

- (1) In absence of GIAHS designation criteria, it is not clear to villagers what they should preserve, and what not, which types of rice or carp are old enough to be preserved. For the time being, rice-fish culture as a system needs preservation; all contributions to biodiversity are welcome (local varieties, reduction of agro-chemicals use).
- (2) Preservation of culture is so far not embedded in a larger programme, such as incorporation of local stories and dances in school curricula or proper documentation.

The ecotourism initiative can help sustaining the rice-fish culture, if a supporting ecotourism programme is developed.

- *Villagers* need to organise into an organisation that ensures the GIAHS experience in their village. Longxian on its own is unlikely to attract substantial tourists in the long term – the carrying capacity is too low. Therefore the Longxian initiative needs to be embedded in a county or provincial level initiative. For that, the community needs support of county-level players, such as the county government.
- The *county government* can organise a county-level ecotourism programme. If there is sufficient information on the possibilities and political will to develop such programme, the county or provincial government could take the initiative. A vast amount of overseas Chinese as well as schools and individuals from nearby cities are interesting target groups for such a programme.

1.5 GIAHS designation and scaling-up of the GIAHS initiative

So far, the China GIAHS initiative is at the early stage of developing the concept of designation and scaling up process. Assessment and reviews of legal policies that are related or supportive to GIAHS will be

done. While there are obviously some laws and regulations which could be supportive to GIAHS designation, and related to biodiversity conservation exist, such as Lists of Key State-level Protected Wild Medicinal Species, Law on the Protection of Wildlife and Management System of Wildlife Resources, a thorough study would be needed. Also, several related programs are being carried out, like Wetland Biodiversity Conservation and Sustainable use in China, etc. However, in view of the geographical size and complexity of agri-cultural practices in China, it is foreseen that China will develop its national and provincial equivalents of the GIAHS concept: Local GIAHS or NIAHS. Qingtian's rice-fish agriculture will create experiences and a conservation method to Guizhou, Yunan, etc. which have the same systems; possibly under local GIAHS or NIAHS designation.

The Longxian community derives considerable pride for being identified as GIAHS pilot rice fish culture site. However, there are some problems with Longxian's designation as GIAHS, and this would be cleared and defined when the project full scale implementation takes off:

- (1) Protocol to set the boundaries of a GIAHS. Neighbouring villages, or villages elsewhere in the country, are not in a position to claim the GIAHS label, even if they avail of a similar heritage system.
- (2) Local criteria of system's selection or county selection.

Discussions held so far in China during preparatory phase suggest the following procedures:

- (1) Criteria for Chinese Agriculture Heritage Systems are being set at the national level by MoA and CAS through inventory of agricultural heritage systems, assessment and definition of their national/provincial importance. CAS will investigate if for the time being, GIAHS could be brought under as a special category of the UNESCO "intangible heritage" designation (such as the domain of "knowledge and practices concerning nature and the universe") or the "cultural landscape" (the category of "continuing landscape").
- (2) Provinces can decide if they want to participate in the GIAHS programme. Provinces select counties with high agriculture heritage coverage that can run the provincial designation programme.
- (3) Counties participating in the GIAHS programme get the mandate to select more than one village as a local Agriculture Heritage System; if the village complies with Agricultural Heritage System criteria, and if it subscribes to make active use of the GIAHS initiative.

Annex 4 summarises GIAHS designation criteria for the Chinese programme.

1.6 Other community-level opportunities

There are other opportunities the GIAHS concept could create; for example, the development of Payment for Environmental Services systems (for biodiversity, beauty or water services). A new government policy for rural development has recognised many functions of agriculture, including its ecological and cultural functions. However, for the time being the political and legal basis for such systems is lacking. Much research and advocacy of the critical role of GIAHS especially in biodiversity rich regions in providing ecological services remain to be done to institutionalize eligibility of GIAHS for Payment for Environmental Services.

2. Opportunities at regional and national level

2.1 Biodiversity conservation

The GIAHS project is to contribute to the implementation of the Convention on Biodiversity (CBD: Article10(c)). This goal has a global and long-term rationale. Opportunities for biodiversity conservation within the pilot GIAHS sites/systems are as follows but not limited to:

- Integrated Pest Management (IPM) and other pollution and agrochemical reduction measures in the rules for GIAHS designation;
- The *county government* should be responsible for organising IPM training to GIAHS communities including an information system to monitor pesticide and other agro-chemical use, and a possible diversion of subsidies for agro-chemicals;
- *Scientists* should study the causal links between traditional and modern agricultural practices and their impact on biodiversity
- The *GIAHS Community* should follow IPM courses, and revive traditional cultural practices for pest control, and establish an internal control system on use of agro-chemicals

- The scientific community will look into the possibility of development of a Payment for Environmental Services system

2.2 Scaling-up of the GIAHS initiative

For each pilot country, the global GIAHS initiative aims to scale up the GIAHS sites/systems so that it becomes a mainstream development. After the GIAHS concept and criteria are designed at local/national level, such a scaling-up effort should follow. Opportunities include but not limited to:

- Scientists at various levels, in close coordination with various levels of authorities, may support the development of National and Provincial / County equivalents of GIAHS.
- National and provincial / county authorities may develop an organisation for local or national GIAHS designation.
- National and local awareness raising is an essential component to ensure political and scientific support for the concept.

2.3 Scientific justification of support to GIAHS

China has plenty of traditional agricultural heritage systems. The GIAHS initiative will try to systematically assess and make inventory on China's different agricultural heritage systems which could qualify as "GIAHS". The global GIAHS initiative plans to expand to 100-150 GIAHS during the project life span. The China GIAHS initiative hopes to designate 10 or even more GIAHS from the country. At the same time, China is on its way to build national GIAHS or NIAHS, which will list all agricultural heritages with national significance, just like the World natural and cultural heritages.

For research to contribute to the GIAHS project, coordination mechanisms and a research framework needs to be developed. The NPMI (CAS) has initiated a Centre for Agricultural Heritage that may take up this role.

Opportunities for a coordinated research effort include:

- discussion of the contribution of the Chinese GIAHS initiative to the development of the global GIAHS concept;
- CAS further develops its Centre for Agricultural Heritage that takes up the function of documentation of on-going and historical research efforts with regard to the Chinese agricultural heritage.
- CAS develops a research framework for the GIAHS initiative; both for descriptive research, and for action research, to support all actors at all levels in supporting the GIAHS initiative.
- CAS, in close cooperation with the GIAHS communities and county and provincial authorities, develops a research protocol in order to not undermine the GIAHS community's support to scientific research.
- National GIAHS initiative needs help from the global level consists of: Internationally acknowledged framework, including labelling standards for GIAHS; national political support; and Project finance; from similar initiatives elsewhere in the country to provide experiences lessons.

2.3.1 Research Note

A separate task area is the academic support of the project. By definition, academic work is not confined to existing boundaries and management routines. It is the task of academicians to have an overview over the GIAHS project, and contribute from their own discipline. Natural and scientific research support is particularly needed for the global and national components – to justify the existence of GIAHS, and to construct monitoring systems to see whether the programme has the desired ecological impact. Other disciplines relevant to the GIAHS project include socio-ecological research, and socio-political research – to study the institutional environment and possible support to GIAHS conservation.

2.3.2 Development outcomes

A major threat to GIAHS conservation is out-migration of the GIAHS population because of a low economic viability and development in the rural areas. A major task of the GIAHS project is thus the creation of economic opportunities, for the community to conserve agricultural biodiversity and associated biodiversity harboured in GIAHS and its (cultural, biodiversity, economic) outcomes – in line with the

“People, Planet, Profit” outcomes as defined by international conventions. Outcomes with direct impact on the community and the agricultural system are called “development outcomes”.

In the case of Longxian, there are some direct opportunities to achieve development outcomes. The major one is the development of a niche market for locally dried fish; another one is the development of eco-tourism; both contribute directly to farmers’ incomes. The prescriptions by the GIAHS concept (reduced use of agro-chemicals; emphasis on local varieties, recognition of local agricultural heritage, etc.) have direct impact on rice-fish culture as a biodiverse system.

2.3.3 Institutional and scientific outcomes

Most “development outcomes” cannot be achieved directly. Sustainable impact can only be achieved through a conducive agricultural heritage governance framework (quality of organisation; policies; payment, labelling, designation systems; trade chains, ecotourism infrastructure; adapted agricultural extension, M&E systems, decision making systems, etc.) need to be in place to enable farmers to carry out their daily work with due benefits. Moreover, in areas where no ready information or practice is available, scientific support is needed. In order to achieve institutional outcomes, the project needs to align agendas of relevant stakeholders. A practical way to organise stakeholders is by identify an opportunity, and identifying the chain of conditions needed for the opportunity to come true.

In case of Longxian, institutional outcomes can be the development of a product labelling system (along with criteria for sustainable production, etc.); the development of prescriptions for land use and local architecture (for eco-tourism); and the development of a GIAHS designation system.

2.3.4 Project structures to be institutionalised

For the project, involving actors will have to plan and implement extra activities. In view of the long-term impact of the project, it is foreseen that CAS/MoA, the County government and Longxian community organise GIAHS support units, which take care of the coordination, planning and implementation of activities for the project. Such activities might be a one-off – such as a baseline study; however, it is best if such activities are institutionalised, so that the capacity to carry out a baseline study is transformed to a monitoring system that informs decision-making.

CAS is in the process of institutionalising its attention for agricultural heritage by the establishment of a centre for agricultural heritage; Qingtian county is developing a GIAHS coordination unit and farmers are organising themselves in a GIAHS committee. Such temporary structures will be institutionalised as the initiative gets mainstreamed.

2.4 Enabling conditions

Actors at one level can achieve their institutional objectives if supported by other actors, either at the same level, or at other levels. In other words, the outcome of GIAHS work at one level is an enabling condition (in logframe terms: assumption) at another level. In the GIAHS project, a few chains of outcomes will be identified, and these will be operationalised through a Governance-Outcome framework, in which the different tasks will be linked to the agendas and mandates of existing actors.

2.5 Indicators

Finally, key stakeholders need to know whether they contribute to the larger project objective of GIAHS dynamic conservation. For this, “indicators” for each objectives, outcomes and impacts will be identified and agreed upon.

Annex 4. Proposed Designation Criteria for local and national GIAHS

The GIAHS project shall develop its preliminary designation criteria at their local designation systems for local and national GIAHS. Such criteria may be organized around six categories (subject to change and further discussion), as follows:

1. Conservation of natural capital such as biodiversity
 - Reduction of agro-chemical use following IPM-criteria
 - Local experimentation with traditional varieties
2. Developing system-based economic opportunities
 - Utilisation of the GIAHS designation to develop economic opportunities
3. Maintaining cultural heritage
 - Respecting the local tradition when planning for new infrastructure
4. Developing policy support
 - The GIAHS community formally participates in designing of a rights-based policy development process
5. Supporting research
 - Action research as well as fundamental research contribute to dynamic conservation of the GIAHS
6. Set-up of a heritage-sensitive governance system
 - State subsidies can be utilised for heritage-sensitive development work in GIAHS villages
 - GIAHS project funds are utilised so that the GIAHS governance system becomes self-sustaining



Annex 5. References on Biodiversity and Culture

(1) Biodiversity

Species in Qingtian (in *China's Species Red List*)

Number	SPECIES
1	<i>T.chinensis var. nairei</i> Cheng et L. K. Fu
2	<i>Bretschneidera sinensis</i> Hemsl.
3	<i>Pseudolarix kaempferi</i> (Lindl.) Gord.
4	<i>Torreya grandis</i> Fort. et Lindl.
5	<i>T. jackii</i> Chun
6	<i>Zelkova schneiderana</i> Hand.-Mazz.
7	<i>Fagopyrum dibotrys</i> (D.Don) Hara
8	<i>Liriodendron chinense</i> (Hemsl.) Sarg.
9	<i>Magnolia officinalis</i> Rehd.et Wils
10	<i>M. officinalis ssp.biloba</i> Cheng et Law
11	<i>Cinnamomum camphora</i> (L.) Presl.
12	<i>Glycine soja</i> Sieb. et Zucc.
13	<i>O. henryi</i> Prain
14	<i>Toona ciliate var. pubesceus</i> (Franch.) Hand.-Mazz
15	<i>Trapa ineisa</i> Sieb. et Zucc
16	<i>Emmenopterys henryi</i> Oliv.

Agricultural biodiversity: Rice paddies (20 native rice varieties; many threatened), home gardens, and livestock / poultry; Trees and field hedges; numerous native vegetables and fruits including lotus roots, beans, taro, eggplant, Chinese plum (*Prunus simoni*), mulberry; 6 native breeds of carp.

Associated biodiversity: 5 species of fish, and amphibians and snails in paddies; 7 species of wild vegetables collected in borders of fields; 62 forest species are used (21 as food); 53 medicinal plants.

(2) Culture

The traditional culture forms related rice-fish system include the typical diet culture (dried sliced fish, field fish dishes), folk arts (song, dance and stone carving), folk habitude, proverbs, hymeneal cultures, traditional farm tools, and so on.

Annex 6. Main Stakeholders Responsible for Implementation (Qingtian County site level)

(1) Local level stakeholders

Stakeholder	Main task	Other tasks	Support needed
Communities in Longxian	Develop adaptive management of its GIAHS (organic /ornamental agriculture, certification, product trading links, etc.) in Longxian	Relative events in village	Facilitation for development of payment-for-services Technical support for re-inventing traditional practices in a future institutional setting Clear standards of compliance for GIAHS labeling
Overseas Chinese network,	Financial support	Business in abroad	Policy from local government
Local businesses	Develop alternative livelihoods (natural links, cultural links, tourism, payment of environmental services) in Longxian	Some other businesses	Facilitation for development of payment-for-services

(2) Meso-level stakeholders

Stakeholder	Main task	Other tasks	Support needed
Provincial government of Qingtian	provincial policy and development planning Include GIAHS considerations in provincial policies and plans for rural development, organic agriculture, education, culture and niche tourism	Facilitation and implementation of local project activities	National labelling/monitoring standards for GIAHS
Agriculture Bureau	Develop and implement the adaptive management plan for GIAHS in Longxian Support communities to enhance multiple values of GIAHS as well as alternative livelihoods in Longxian	Other agricultural events in Qingtian	Local government policy Technical support from CAS and Zhejiang University
Others: Tourism Bureau; Water Bureau. Local businesses, etc.	Capacity building and training Rice-fish system conservation	Facilitation and implementation of tourism\water and other projects	Local government policy Technical advice Financial support
Zhejiang University	sharing lessons learnt and providing scientific basis for policies relating to GIAHS Technical advice	Education and research	political support

(3) National level stakeholders

Stakeholder	Main task	Other tasks	Support needed
Ministry of Agriculture (MoA)	Provide policy, scientific technique and project formation support, offer opportunities of training and project evaluation. Formulate, coordinate and implement GIAHS considerations in target policies	Mandates in the area of agricultural, natural resources, biodiversity and protected areas policies	National political support
Chinese Academy of Sciences (CAS)	A new center for natural and cultural heritage research was founded which includes a unit for agricultural heritage research Provide scientific support for policy making.	scientific support for government policy making incl. in the areas of agriculture, natural resources, geography and biodiversity Lead facilitating institution Liaise with local government Provide technical advice	Internationally acknowledged framework, including labelling standards for GIAHS
FAO – Regional Office and CO	Ensure linkages with other national and regional FAO-led programs of technical and policy nature	Technical, policy and logistical support for agricultural and rural development	Support from FAO headquarter and other international organizations

Annex 7. Level-wise Task Division for GIAHS Project Implementation

Possible tasks for each action level to arrive at dynamic conservation of GIAHS

Action level	Prime tasks	Support needed	Likely stakeholders
Global	<ul style="list-style-type: none"> ● Define and communicate international policy objectives ● Develop a conceptual framework for GIAHS and site designation standards and procedures ● Control the quality of national (possibly local) GIAHS designation processes ● Develop GIAHS conservation scaling up mechanisms ● (Grossly outcome 1 and 4 of the Global Project Logframe) 	<ul style="list-style-type: none"> ● Mandate to define and designate sites as GIAHS ● Feed-back from national initiatives 	FAO, GEF / other donors, nature INGOs, etc.
National	<ul style="list-style-type: none"> ● Develop national policies conducive to rights for GIAHS population ● Initiate GIAHS project structures ● Develop a national policy framework for GIAHS dynamic conservation ● Support local government initiatives to designate sites as GIAHS ● (Grossly outcome 3 of the Global Project Logframe) 	<ul style="list-style-type: none"> ● Internationally acknowledged conceptual framework for GIAHS ● National political support ● Project finances 	National Line Ministries, national FAO offices and GEF-focal point institutions, academe, INGOs
Local	<ul style="list-style-type: none"> ● Develop supporting institutions ● Initiate local GIAHS project structures ● Develop functioning supporting institutions for GIAHS, such as financial mechanisms, land use planning, eco tourism planning, technical support 	<ul style="list-style-type: none"> ● Standards for GIAHS site designation ● Supporting national policies ● Mandate to develop a GIAHS conservation initiative for listing ● Project finances 	Local Government Units, local NGOs, academe, local businesses, etc.
Community	<ul style="list-style-type: none"> ● Dynamically conserve the GIAHS ● Operationalise political setting in which GIAHS project can support ● Operationalise institutional links to support dynamic conservation of the GIAHS (agriculture, natural links, cultural links, tourism / environmental services / product trading links, etc.) ● (Grossly outcome 2 of the Global Project logframe) 	<ul style="list-style-type: none"> ● Rights ● Facilitation for development of payment-for-services ● Standards for GIAHS designation ● Technical support for re-inventing traditional practices in a future institutional setting 	Local communities, local businesses, academe

Annex 8. Maps



Fig1. Location of the pilot system – RFC

Rice-Fish system pilot site in Longxian Village of Qingtian County

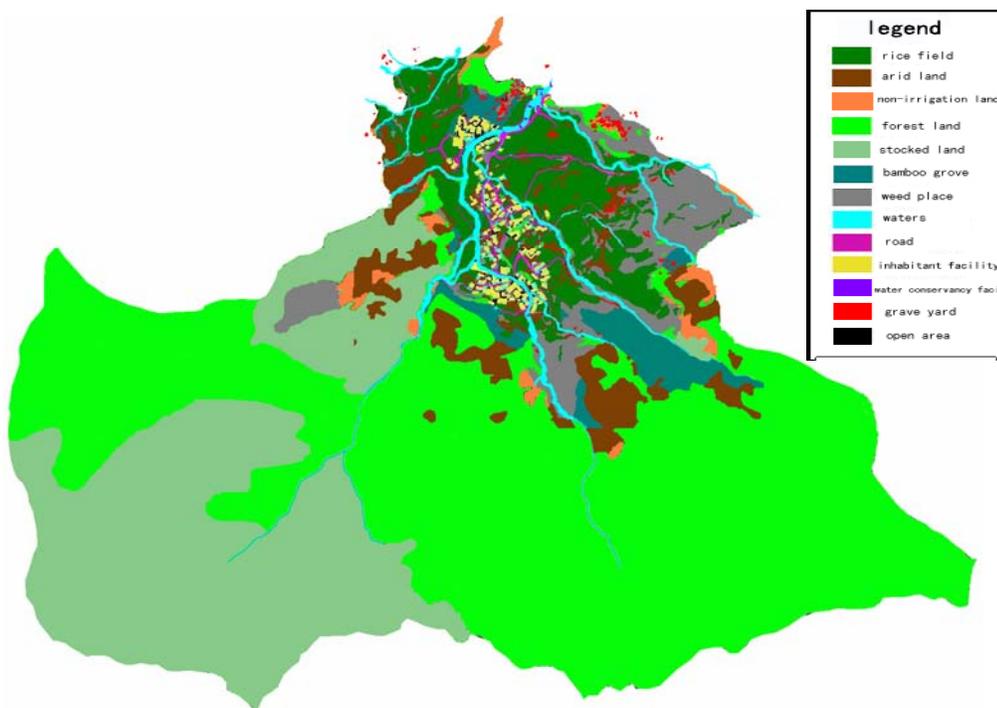


Fig2. Landscape of the pilot site (Longxian village)

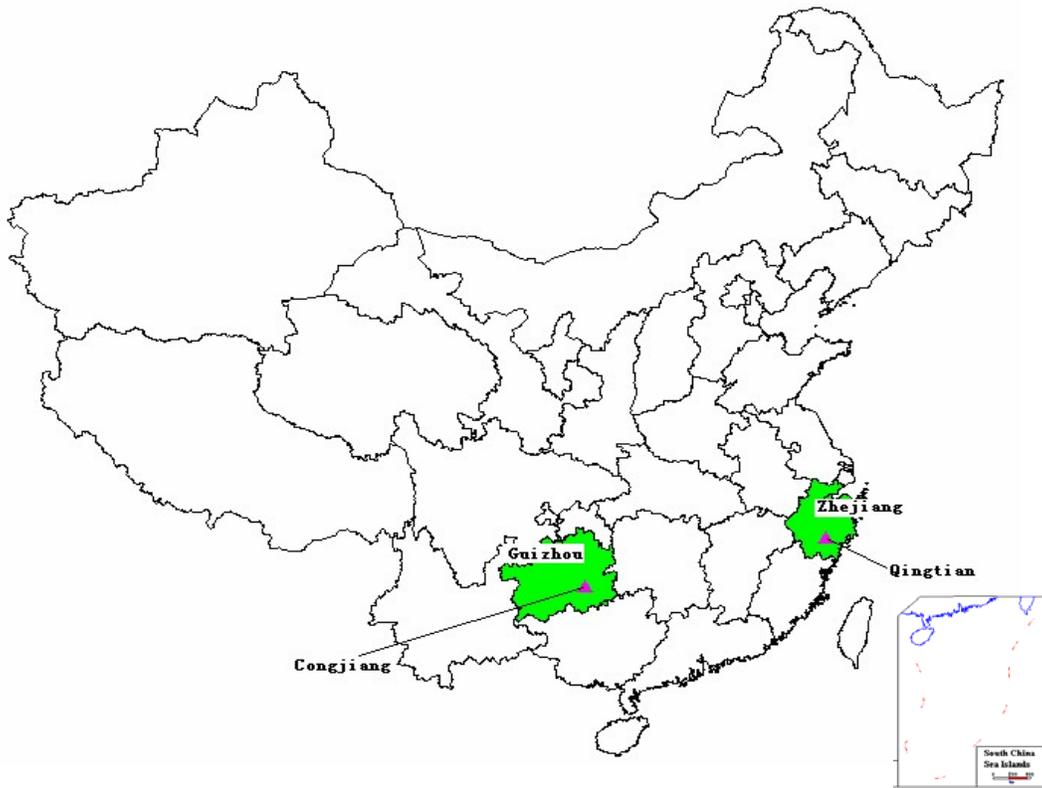


Fig3. Location of the pilot Rice-Fish system in China

Rice-fish systems of Qingtian County in Zhejiang Province and Congjiang County in Guizhou Province
(Note: Qingtian County is the GIAHS polite site, while Congjiang County is the nominated associated site.)