China's GIAHS Conservation: National Framework

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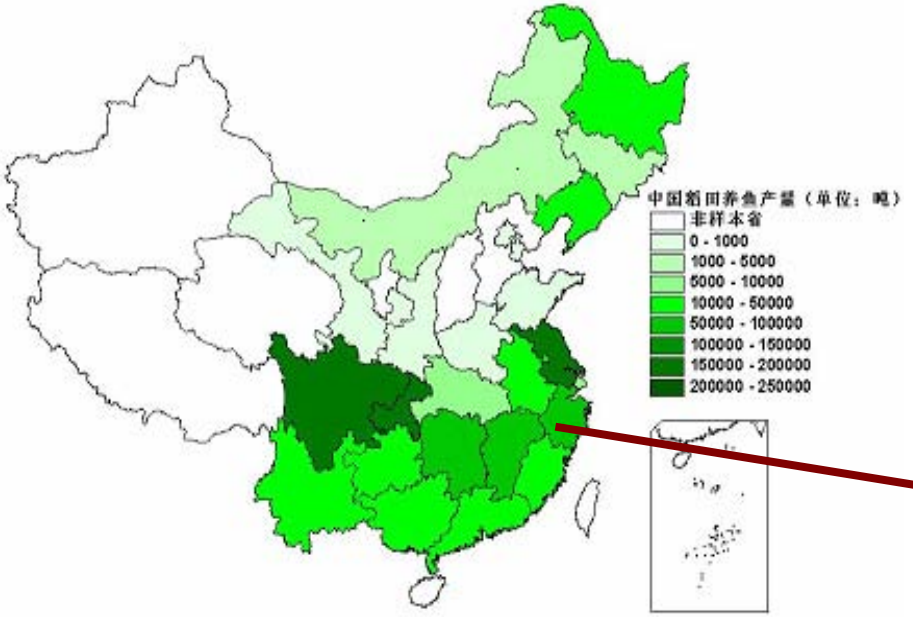
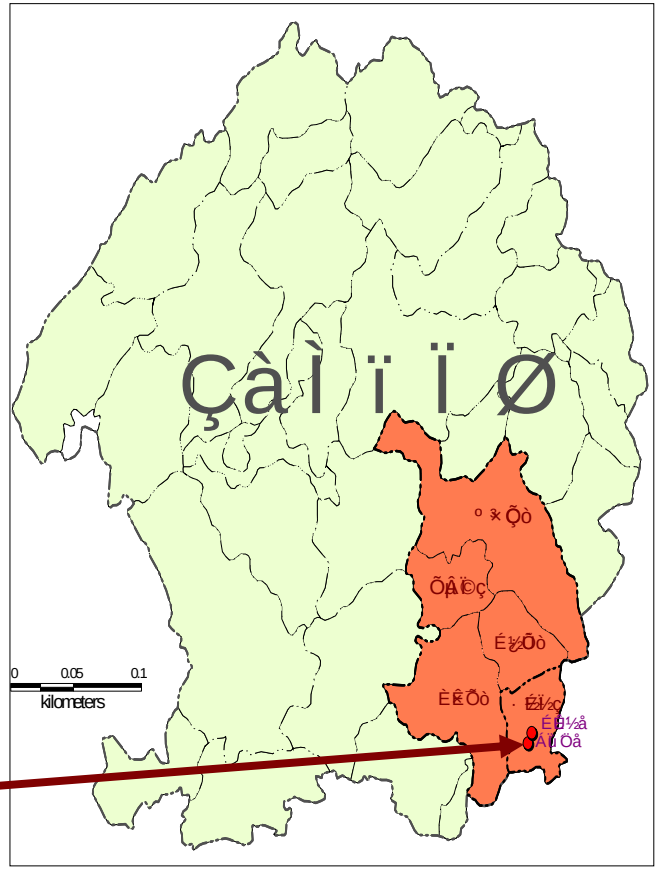
- **Description of the Pilot System**
- **History of the Co-evolution of the Rice-fish Agriculture**
- **Threats to the Biodiversity and Ecosystem of the System**
- **Activity Plan**

Description of the Pilot System

Location and landscape





Longxian Village

浙江省青田县方山乡龙现村景观图

图 例

- 水田
- 旱地
- 林地
- 竹林
- 荒草地
- 水域
- 道路
- 居民建筑
- 水利设施

比例 1：2000

Area and population

- The rice-fish farming of Longxian Village covers an area of 26 ha in 2005.
- 255 households, 690 persons, while almost 200 people live in abroad now.

Agro-economic structure

- Gross income: 6.124 million yuan, per capita 8875yuan
- Total agricultural (0.76 million yuan) and fishery income (0.47 million yuan) : 1.23 million yuan, 20% of the gross income.
- Main income comes from out-working.

agro-biodiversity characteristics

Agricultural species include:

- Different kinds of agro-ecosystems: integrated use of forest (70% of watercathment), paddies, home gardens, trees and hedges in the field and small livestock / poultry;
- 20 native rice varieties (many threatened);
- Vegetables: lotus roots, beans, taro, eggplant and numerous other native vegetables;
- Fruits: the Chinese plum (Prunus Simoni), mulberry;
- 6 native breeds of carp red/black/white/variegated carp.

Other species:

- 5 species of fish, amphibians, snails;
- 7 species of wild vegetables collected in borders of fields;
- 62 forest species are used, of which 21 as foods;
- 53 medicinal herbs; an
- wild cats, snakes.

ecosystem functions

- Providing multiple goods and services: food security (rice 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 reduction of pesticides); pest control; Improving farmers' health with reduction of pesticide application; carbon and nutrient cycles; soil and water conservation and restoration.
- Demonstrating an ingenious approach to inspiring how economic and social benefits can be harmonized with the essential ecological benefits.
- Fostering a local and classical culture related rice-fish system, e.g. field-fish lantern dancing.

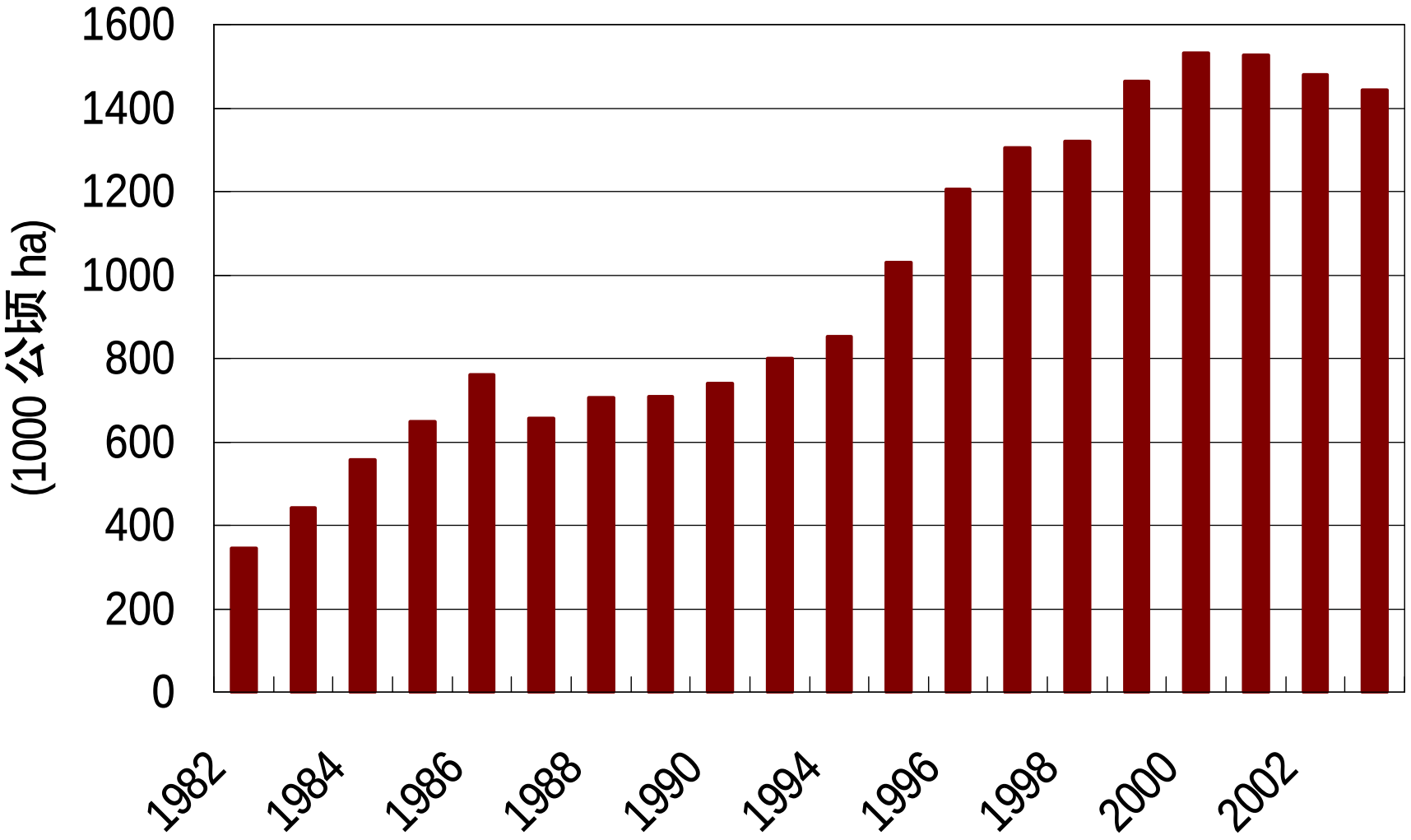
History of the Co-evolution of the Rice-fish Agriculture

- The earliest written record of rice-fish farming by Fan Li in 400 BC
  - ... *dig six mu of land into a pond … put 2000 fry into the pond …sell the rest in the market."* 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.

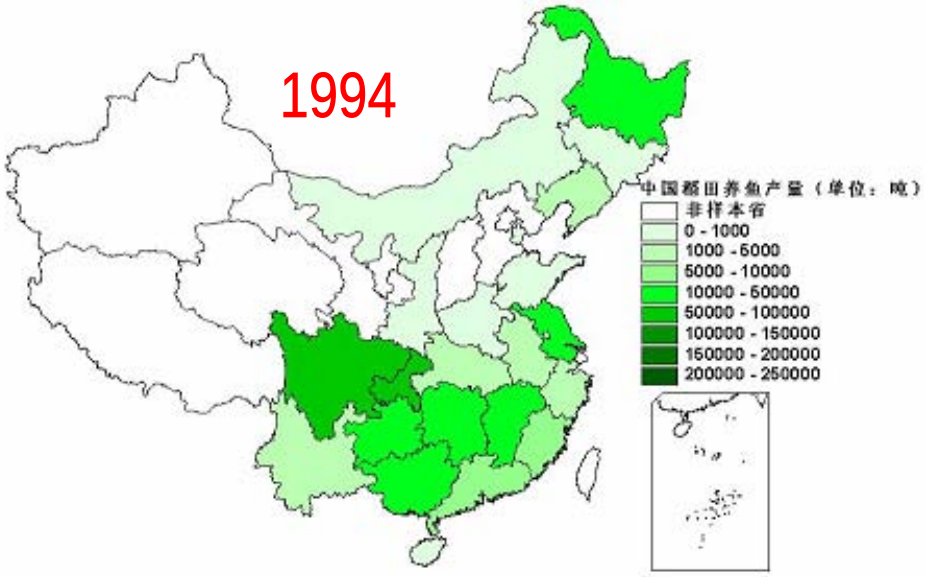
- Two clay models were unearthed in the tombs of the mid-Eastern Han Dynasty (25-220 AD):
  - a model of a pond and a model of a rice field. The pond model contained 15 miniature pieces (6 common carp, 1 soft-shell turtle, 3 frogs, and 5 water chestnuts).
- A stone carving of a pond and rice field model was discovered in the brick tomb of the Eastern Han Dynasty (220 AD):
  - 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.

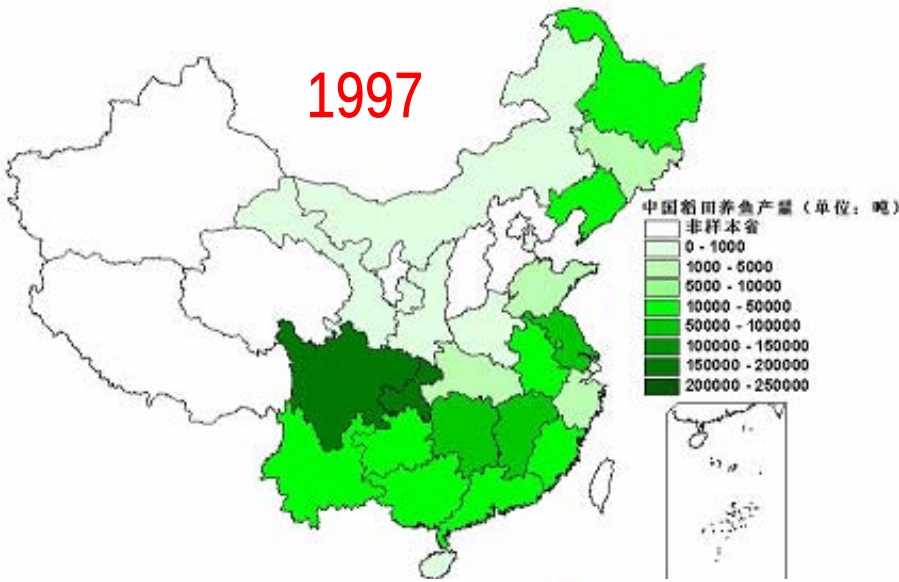
- These relics not only proved that rice-fish farming system was one of farmer’s production practices at least 1700 years ago but also proved that the early rice-fish farming system is a very diverse system.
- Since 1949, rice-fish culture have developed quickly.

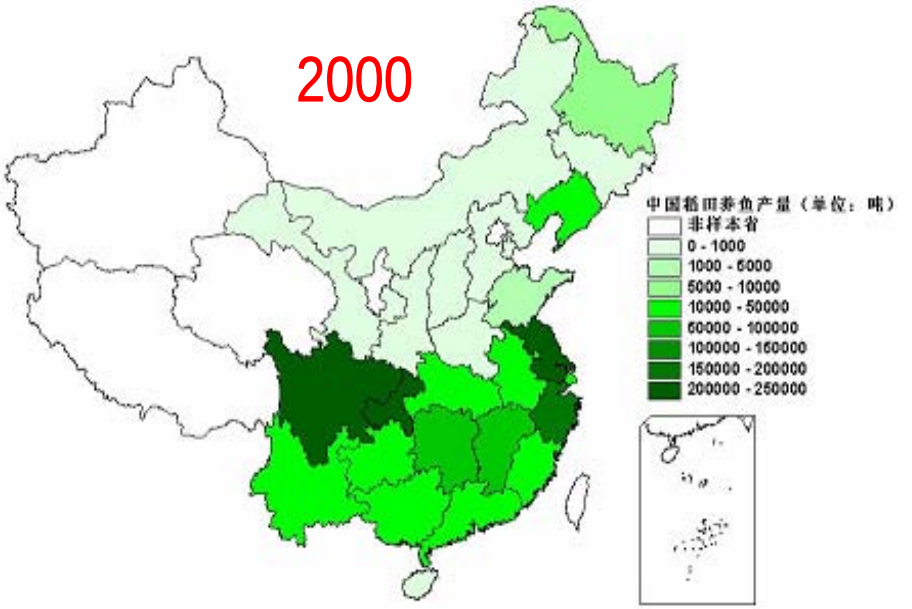
Rice-fish farming area in China, 1982-2003

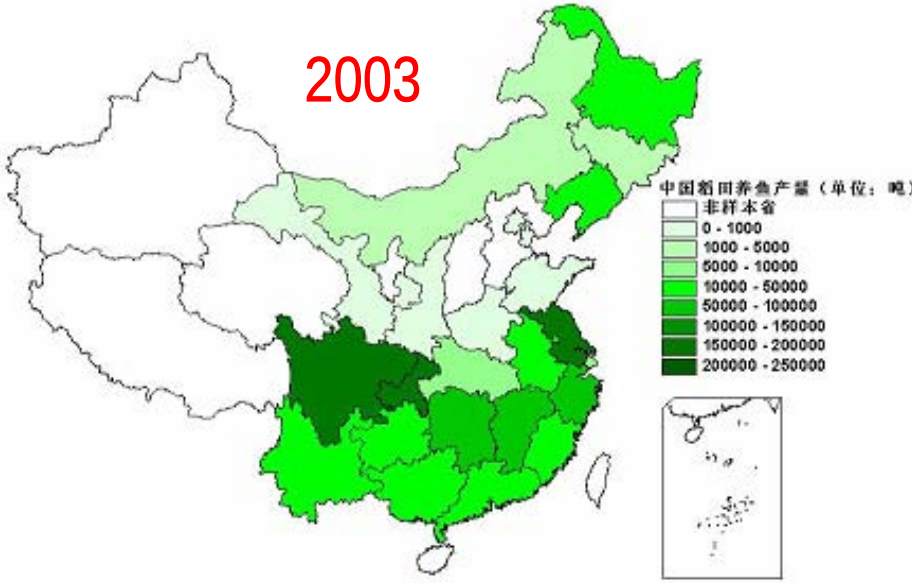


Distribution of rice-fish farming in China







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Threats to the Biodiversity and Ecosystem of the System

- Expansion of mono rice or fish systems with high yield, the intensive fish culture produces much fish at a low cost to the market;
- Excessive application of chemicals (especially pesticides for rice and antibiotic medicines for fish) because food safety, ecological services and environmental protection are seriously undervalued;
- Urbanization, industrialization and Labors transfer from agriculture to other sectors and from village to cities or abroad.

Some obstacles to impede development

- There aren’t laws or manage regulations specifically on GIAHS conservation.
- The ecological restoration project didn’t play the obvious role, the endangered species haven’t got concrete protective measures. The main reasons are the insufficient investment and the shortage of useful research fruits.
- The cultural diversity conservation is still at the initial stage.
- The local authority takes insufficiently it comparing to economic development.

Activity Plan

Objectives

- Establishment of institutional framework and multi-stakeholders participatory mechanisms;
- Analysis of the GIAHS (functioning, characteristics, threats, challenges and opportunities);
- Preliminary assessment of policy, regulatory, and incentive environments and the identification of supportive measures or removal of perverse incentives;
- Establishment and perfection of the methods for monitoring, evaluation and implementation during the Full Scale Project;
- Capacity building of vulnerable stakeholders; and
- Small priority activities that directly benefit farmers and encourage the participatory assessment and project formulation.

- **Demonstration Base for GIAHS Conservation both International and National**
- **Education Base for Harmony Between Man and the Nature**
- **Research Base for Ecological Agriculture and Agricultural Heritage Systems**

Adaptive management strategies

- To compile the Master Plan for the Dynamic Conservation of Traditional Rice-Fish Agriculture.

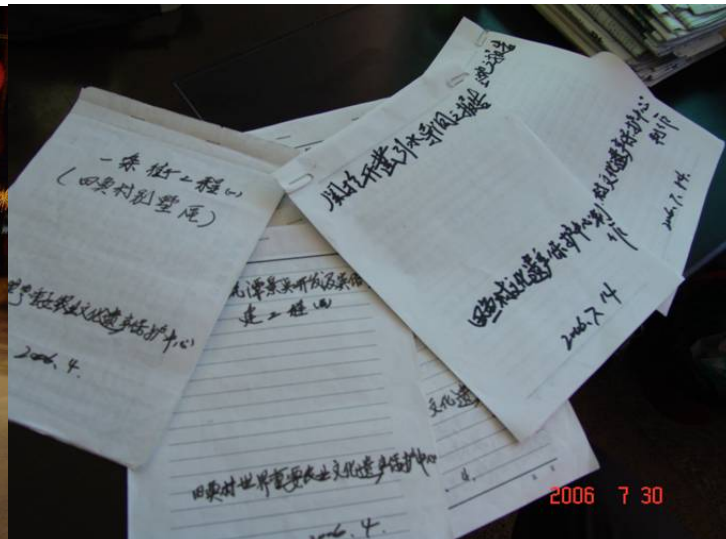
Outline of "Master Plan for the Dynamic Conservation of Traditional Rice-Fish Agriculture"

- Introduction
- History and Current Situation
- Multiple Values
- Strength, Weakness, Opportunity and Challenge
- Regionalization
- Social and Economic Conditions
- Agro-ecological Protection
- Traditional Cultural Conservation
- Technology Progress
- Organic Agriculture Development
- Eco-Tourism Development
- Community Participation and Capacity Building
- Key Construction Items
- Policy Measures

- To replant the traditional rice and fish species. In Longxian village, there are altogether 26 ha of paddy rice field, according to the plan, 4-5 ha of paddy field would be forced to plant traditional rice species every year, and in six years later, all the paddy rice field will be refurbished by the traditional rice species before 1970s', such as Sanriqi, Red wanjin, etc.

- To develop the alternative industries. According to the experiences and the situation of Longxian village, we propose that the eco-tourism and organic agriculture are two reasonable ways. While these two kinds of industrial development need several years, thus an ecological compensation mechanism should be established first.

- To make culture conservation and succession. Culture is the base of the GIAHS site; GIAHS conservation can not be really realized without cultural collection and effective conservation. We will collect the folk tales, food culture and customs, such as the tales of Longxian village, the fish lantern dance and so on; these cultural forms are of significance for the system conservation.



- To build the multi-stakeholder process. The conservation of GIAHS will relate to many stakeholders liking local farmers, governors, enterprisers, scientists, and so on, and will obtain different benefits at international, national and local levels.

- To disseminate the dynamic conservation knowledge and raise awareness of social forces to participate the GIAHS conservation.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中国田鱼村
2005 11 17


共青团方山绑第十五次代表大會
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- To build the national GIAHS mechanism. China is a large agricultural county with long history, there are many agricultural heritages in the process of its development. We will determine the criteria of national GIAHS, set up China’s National Agricultural Heritage Systems List and establish a Network for China’s Agricultural Heritages.

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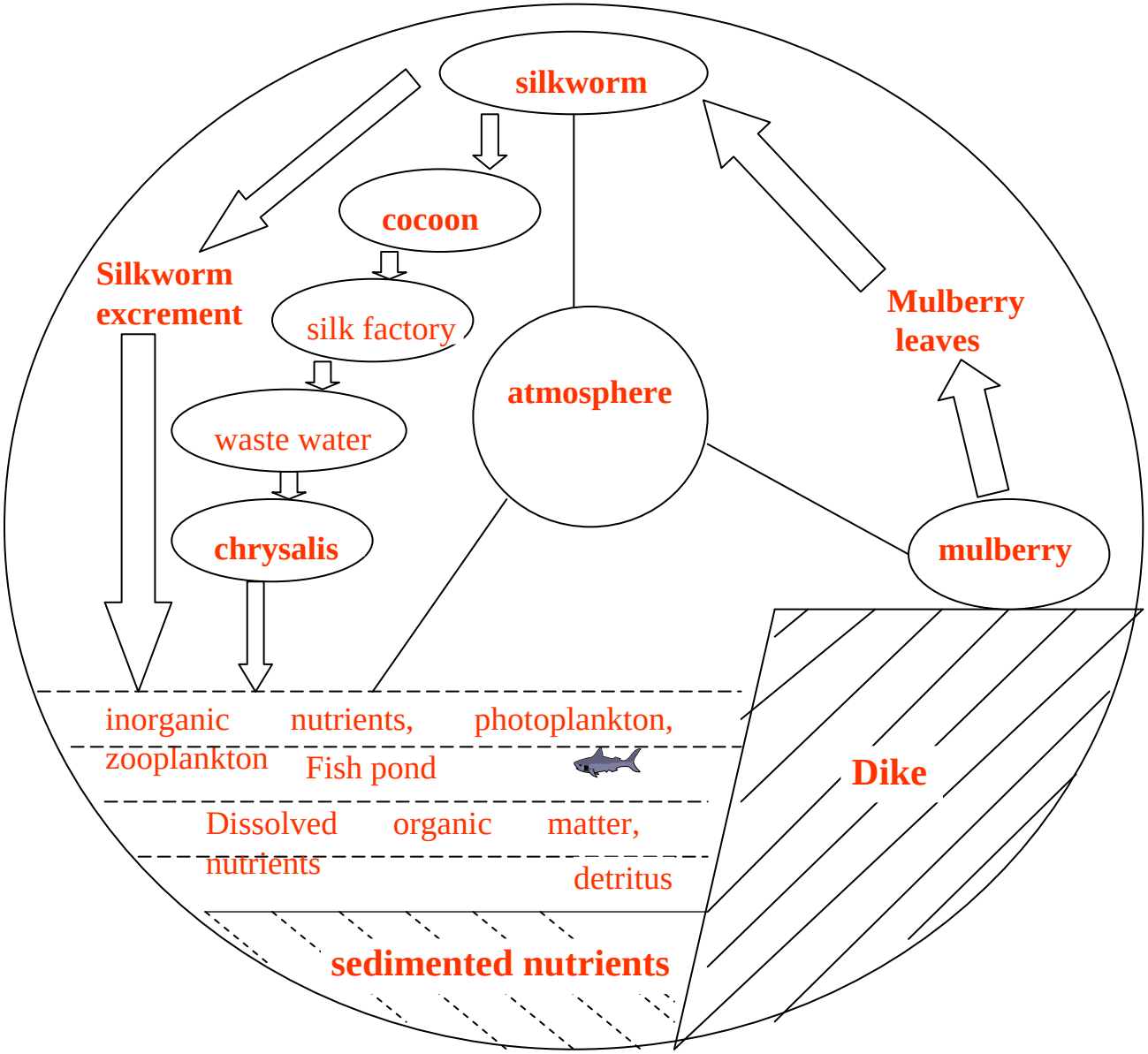

The sketch of mulberry dike-pond ecosystem


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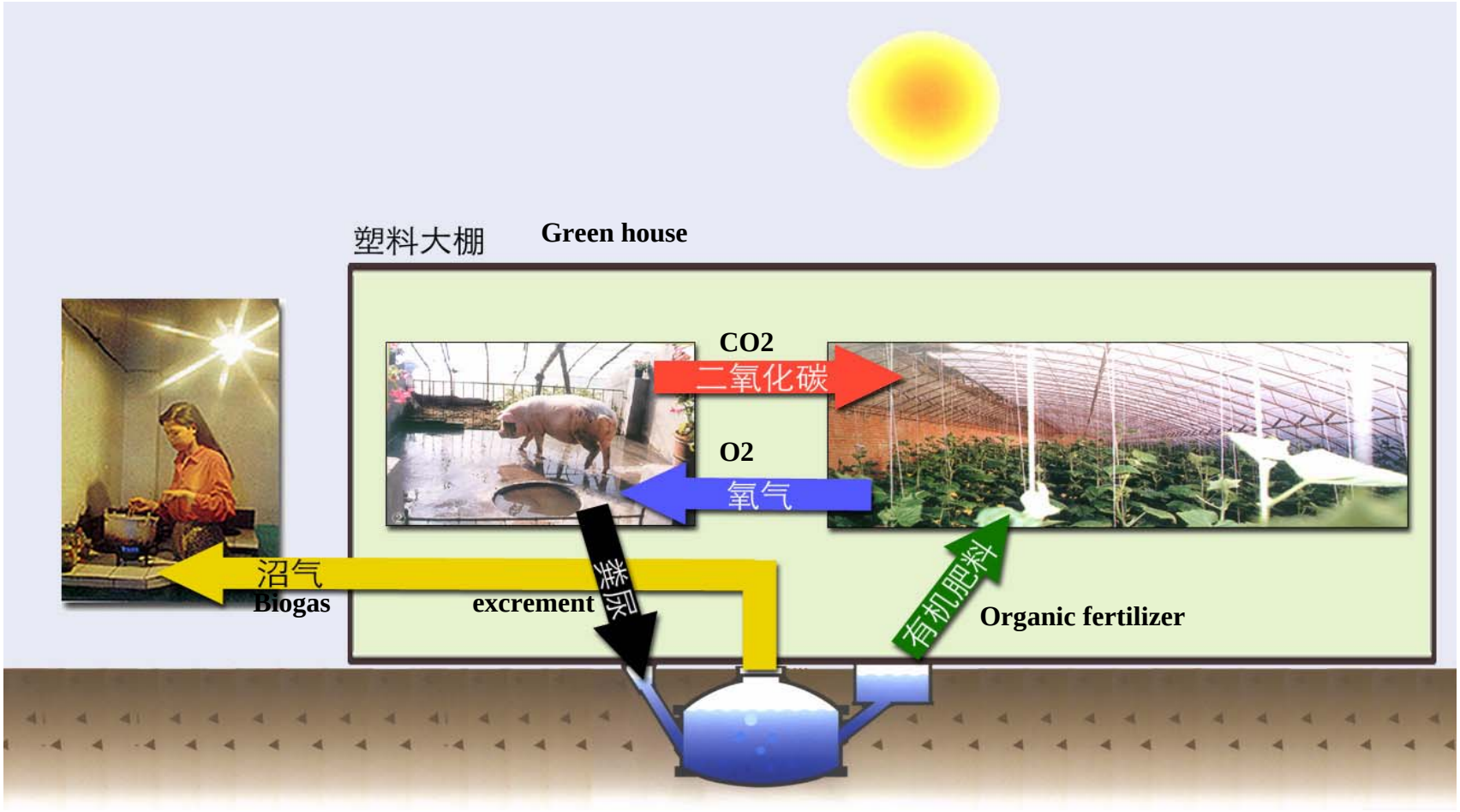
A general structure of “Four-in-One” model



Managerial / institutional arrangements

Level	*Prime tasks*	*Support needed*	*Likely stakeholders*
National	• Develop a national policy framework and institutional support for GIAHS adaptive conservation • Develop a national guideline on nomination, labelling and monitoring of GIAHS • Develop a national research network on agricultural heritage • Support governments of Zhejiang Province and Qingtian County for establishment of a sustainable GIAHS in the pilot site in Longxian	• Internationally acknowledged framework, including labelling standards for GIAHS • National political support • Project finances	**Managing department:** Ministry of Agriculture **Technical support:** Chinese Academy of Sciences **Other partners:** Ministry of Culture GEF focal point in Beijing NGOs FAO Rome FAO Beijing UNDP Beijing UNU/PLEC

Level	*Prime tasks*	*Support needed*	*Likely stakeholders*
Provincial	• Mobilize provincial support to Qingtian County for establishment of a sustainable management system of GIAHS in Longxian • Liaise between national and Qingtian County	• National labelling/monitoring standards for GIAHS • Provincial political support • Project finances	**Managing department:** Department of Agriculture of Zhejiang **Technical support:** Zhejiang University

Level	*Prime tasks*	*Support needed*	*Likely stakeholders*
Local	• Develop supporting institutions for adaptive management of GIAHS in Longxian • 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	• National labelling/monitoring standards for GIAHS • Supporting national and provincial policies • Technical support from academia • Mandate to develop a GIAHS conservation initiative for international labelling • Project finances	**Managing department** Qingtian Government; Agricultural Bureau **Other parterners** Tourism Bureau; Water resources Bureau; Cultural Bureau Sci. & Tech. Bureau; Township; Village; Local businesses; NGO; etc.

Level	*Prime tasks*	*Support needed*	*Likely stakeholders*
Community	• Develop adaptive management of its GIAHS (organic /ornamental agriculture, certification, product trading links, etc.) in Longxian • Develop alternative livelihoods (natural links, cultural links, tourism, payment of environmental services) in Longxian	• Facilitation for development of payment-for-services • Clear standards of compliance for GIAHS labelling • Technical support for re-inventing traditional practices (organic agriculture) in a future institutional setting	Communities in Lonxian; Overseas Chinese network; Local businesses

Organisations

- National Steering Committee (MOA)
- Technical Advisory Committee (CAS-CNACH)
- Local Implementation Committee (Provincial, County, Township and Village)


Thank You Very Much
For Your Attention