

## **Rice fish *agri-culture* heritage: enduring farms, ensuring livelihoods**

Rice fish culture (RFC) of China is a pilot system supported by the FAO-GEF global Initiative on “*Conservation and Adaptive Management of Globally Important Agricultural Heritage System (GIAHS)*” with the participation of Algeria, China, Chile, Peru, Philippines, and Tunisia. The Project seeks to promote the international and national recognition of agricultural heritage systems and their dynamic conservation in-situ through policy support, capacity building and concrete support to local communities and their livelihood to conserve and manage GIAHS, generate income and add economic value to goods and services of such systems.

China’s agriculture is centred on rice. The rice production has had a strong influence on the countries social, economic, political and ideological development. Being tagged as a “rice culture country”, it is not surprising to find many rice-related agricultural systems that merit recognition due to their multiple goods and services. The rice fish culture is practiced in the Longxian, Qingtian county in mountainous area of the southern Zhejiang province.



Growing rice and fish together



A GIAHS Rice-Fish monument was built in Longxian village in 2005 after introduction of GIAHS.

FAO definition of GIAHS are *"remarkable land use systems and landscapes which are rich in globally significant biological diversity evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development"*.

Rice-fish systems have co-evolved with wet rice cultivation in China about 2,000 years ago and are sustainable forms of agriculture, providing invaluable protein especially for subsistence farmers managing rainfed systems.

Rice Fish culture is a practice of irrigating rice fields by gravity from streams from which fish enters and start growing in the paddies. Ecological symbiosis exists in the rice-fish agricultural system. Fish provide nutrition and fertilizer to rice, regulate micro-climatic conditions and eat larvae and weeds in the flooded fields, reducing the cost of labour needed for fertilizer and insect control. The extension of the shallow water surface in rice fields and the disturbance by fish activities help maintain a high oxygen solution in the water

for fish growth. The system likewise support the conservation of agricultural biodiversity such as traditional rice varieties, native breeds of carps (red, black, white) and wild fish species, frogs, toads, newts, salamanders, snails, rice field eel, loaches, etc in paddy fields because of the non-use or minimum use of chemical fertilizers and pesticides. The rice-fish culture' self-sufficiency production provides favourable eco-environmental conditions that are also beneficial to conservation of other crop species for home gardens i.e. lotus roots, beans, taro, eggplant, Chinese plums, mulberry and forest tree species of ethno-botanical and medicinal uses.

However, population emigration and modern technologies to intensify production is threatening the rice fish culture system in Longxian village. Up to 50 per cent of the villagers are living abroad and most young population are still leaving or have intention to emigrate. Furthermore, high intensity rice monocropping production and/or conventional fish systems which include hybrid rice cultivation and excessive application of chemicals (especially pesticides for rice, artificial feeds and antibiotic medicines for fish) in rice fields/or fish ponds drives farmers to less and less practice of traditional rice fish culture. With the modern technologies, farmers have experienced increase in aquatic production by 8.7 times. However, the fish quality has at the same time decreased. The intensified production and applied technologies has lead to increased eutrophication of the surrounding environment and decrease in the biodiversity richness of the paddy fields. Farmers themselves have noted that the technologies and practices applied for intensifying the production are unsustainable.

Through GIAHS Initiative rice fish practices in China has made a comeback and given hope to small scale farmers. The local government of Qingtian has internalized the GIAHS concept and has taken steps forward to promote the conservation of their heritage. The Qingtian Bureau of Agriculture, Environmental Protection, Culture and Tourism has also made great effort to support and encourage local farmers to join the conservation programme. They have provided technical support and marketing assistance to beneficiary farmers such as market support and access, product standards for eco-labelling (fish and rice with GIAHS label sells 50% higher than similar fish without label), and socio-cultural assistance. Longxian village has become popular among tourists (local and foreigners) and the numbers of visitors have increased by more than three-fold. Some well-known national journalists/media representatives have documented the rice fish culture and Hongkong Cable TV channels and BBC have included the system in their documentary on "Search for Traditional Chinese Culture" and "Wild China".

Since 2005, when the Qingtian rice-fish culture system was launched, much progress has been made and there have been many new developments in GIAHS interventions. Beyond all expectations, farmers who went to cities to work in the past are now willing to stay in their town due to the potential economic development and benefits found in their agricultural heritage. Now, they can have better livelihoods by producing organic food products and developing eco-tourism. The government have set up leading groups, developed conservation plans and formulated management regulations to conserve their agricultural heritage.

GIAHS is no longer an “unknown” and has become a “rising star”, among world heritage sites in China, increasingly attracting the attention of governments, the public and the media. Over the last three years, GIAHS has become increasingly popular among decision-makers. China has demonstrated a growing interest and determination to promote and conserve its rich agricultural heritage and to become a good example for GIAHS conservation worldwide. This ambition is reflected in the legislation institutionalizing the Nationally Important Agricultural Heritage Systems (NIAHS) policy. GIAHS has become a nationwide concept accepted in China. And more importantly, agricultural heritage has given hope to millions of small scale farmers and minorities.

Commentary from the People’s Government of Qingtian County

*“...Provided we do not take measures properly and scientifically, the agricultural heritage will not be dynamically conserved. We should promote supportive policies to encourage farmers to promote the traditional rice fish practice which is environmental-friendly and conserves the agri-cultural goods and services – conservation of biodiversity, knowledge systems, cultural festivals and customs”. To make it happen, we should respect personal willingness of the farmers and we share the responsibility among us”.*

**For more information visit: [www.giahs.org](http://www.giahs.org) or contact [GIAHS-Secretariat@fao.org](mailto:GIAHS-Secretariat@fao.org) / [cnach@igsnr.ac.cn](mailto:cnach@igsnr.ac.cn)**