

SAFE-World Project/Initiative Summary

Country: China

Project/Initiative Title: Rice Aquaculture (Fish, crabs and shrimps) - Jiangsu

Scale: Regional

Nos. farmers: 103,000

Hectares: 70,000

Agro-Ecological Zone: I

Improvement types

1x	2	3x	4x	5	6x	7	8	9
----	---	----	----	---	----	---	---	---

A. Key Impacts

A1 – Productivity

	Before/Without	After/With	% change
Rice	6000 kg/ha	6600-6900 kg/ha	10-15%
Fish		200-750 kg/ha	new
Crab and shrimp		300 kg/ha	new

A4 – Impacts on households and individuals (human capital)

Reduction in malaria incidence (Quangzhou County)

Improved food security

A5 – Key changes in farm / regional system

Income 2.8 times greater than mono rice

Reduced use of insecticides

B. Types of Sustainable Agriculture Improvements

Type 1: Better use of available renewable natural capital

Type 2: Intensification of single sub-component of farm system

Type 3: Diversify by adding new productive natural capital and regenerative components

Type 4: Better use of non-renewable inputs and technologies

Type 5: Social and participatory processes leading to group action for making better use of natural capital

Type 6: Human capital building through training-learning programmes

Type 7: Access to Finance

Type 8: Add value by processing to reduce losses and increase returns

Type 9: Add value by direct or organised marketing of produce to consumers

	Yes/No	Narrative
Type 1	x	
Type 2		
Type 3	x	
Type 4	x	
Type 5		

Type 6	x	
Type 7		
Type 8		
Type 9		

D. Contact Point for Project/Initiative

Li Kangmin

Asian Pacific Regional Research and Training Centre For Integrated Fish Farming
Wuxi 214081
P R China

E. Project Narrative

Multi-Functional Fish in Rice Systems, Jiangsu, China

Rice-fish culture offers many multifunctional benefits to rural households, economies and environments. At present, only 0.65% or 136,000 ha of the total area of 21 million ha of irrigated rice fields in South East Asia are used for aquaculture. Jiangsu province in China has more than 30 million mu (2 m ha) of rice fields, among which one third are suitable for rice-fish culture. The “The Extension Project of Large-scale, High-yielding, High-effective Techniques of Rice/Aquaculture in Jiangsu Province” project was developed by the provincial government in the mid-1990s, with multi-functional aims: to develop rice/aquaculture combined with reforming and ameliorating low-yielding paddies, ponds and waterlogging farmland for the purpose of increasing food production and income, promoting rural economy, and enriching farmers.

As a result, the rice aquaculture area in Jiangsu Province expanded from about 5000 ha in 1994 to reach 68,973 ha (1,034,600 mu) in 1997. In addition, the area of rice-crab culture in Jiangsu Province expanded to 36,113 ha (541,700 mu), which accounted for 52.4% of the total area of rice-aquaculture. In 1997 the area of rice-shrimp culture reached 13,867 ha (208,000 mu), which accounted for 20.1% of the total area of rice-aquaculture system.

Single crop farming system can only return 200-300 yuan/mu, and so farmers were losing interest in cultivating rice in paddies. But the economic returns of rice aquaculture are remarkable. If a farmer manages 2/3 of a hectare, the annual income can reach 13,000-15,000 yuan. In 1997 the unit profit of rice/aquaculture fields was 2.86 times that of mono rice cultivation in paddies. Rice-aquaculture systems are low cost, and provide rapid economic returns. They provide an additional source of food and income in rural areas. They also result in increased rice production by 10%-15%. In general, they can produce 14-50 kg of fish per mu (200-750 kg/ha) and farmers will increase their income of 1,000 yuan per mu.

Rice/fish culture also does not damage the basic structure of rice fields and aquaculture does not compete with crops for land. It not only increases rice production, but also harvests fish, shrimp or crab. It will raise farmer’s enthusiasm for crop planting. Comprehensive utilization of rice field resources not only can increase the total amount of food production, but also raise the effective output of fields. Rice-aquaculture farming systems also maintain

the ecological balance of rice field ecosystems. The rural environment can be improved through the use of non-pollution agriculture – the use of agricultural chemicals is greatly reduced.

Rice-fish culture also helps eliminate mosquito larva harmful to human health. Japanese encephalitis and malaria are transmitted by mosquitoes found in a wide belt of Asia. Their prevention depends on improved environmental manipulation to stop the mosquito breeding in rice fields. It has been found that rice-fish systems provide good control of mosquito incidence. In Quanzhou County, incidence of malaria fell from 11.6/100,000 to 0.1/100,000 as the area of rice-fish cultivation grew from zero in 1978 to 43% in 1987 (correlation coefficient -0.9225).

Additional data for this project is in hard copy format and is not currently available electronically. If you would like further information please contact Li Kangmin at the address above.