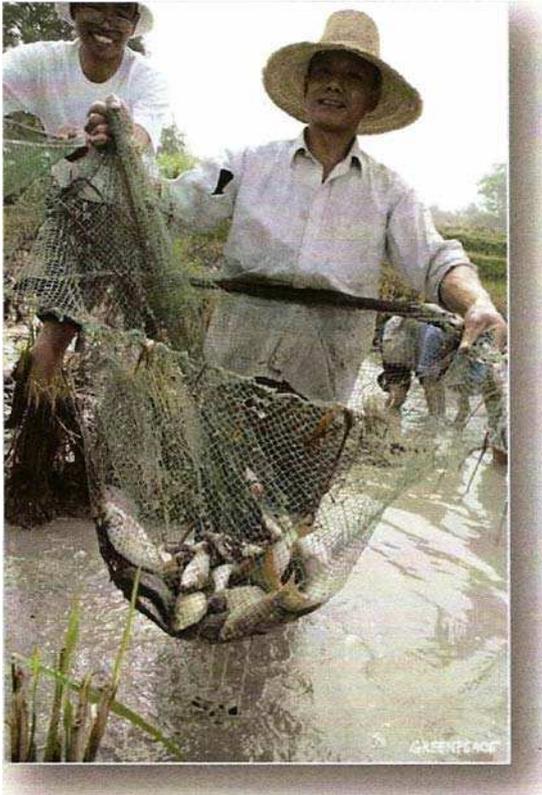


## History of aquaponics



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Aquaponics has been around for ages. The ancient Aztecs had agricultural islands known as 'chinampas', where plants were raised on stationary (and sometimes movable) islands in lake shallows. Waste materials collected in the chinampa canals and surrounding cities were then used to manually irrigate the plants.

In South China and Thailand, rice was (and still is) cultivated and farmed in paddy fields in combination with fish. This 'polycultural' type of farming involves using multiple crops in the same space, much in the same way as a natural ecosystem. These types of ecosystem farming practices existed in many Asian countries and used fish such as the oriental loach, swamp eel,

common and crucian carp, as well as pond snails in the paddies. [1]

New and more complex ways of adding nutrients to crops was further developed and refined in China. Farmers added land livestock waste, such as pig or chicken manure, to their fields or ponds to increase production of vegetables and fruit bearing plants. However, the fish were in danger of receiving too much of these additional nutrients, so the farmers needed to be careful about balancing their system for maximum yield and minimum fish loss. [2]

The results were a complex system with chickens being raised in pens above pigs. The pigs lived in pens over a pond of carp. The water from the carp ponds was then directed to another pond with a different variety of fish such as catfish and other aquatic animals. Other systems included using ducks caged in houses over finfish ponds. The finfish processed the duck waste in the water and the water was then moved into a lower pond with catfish. Finally, after the catfish pond the water would be used to irrigate rice and other vegetable crops. [3]

These structures were called 'flow-through' systems, where water, once used through the ponds, which also grew edible plants, was released to the local paddies for further use as nutrient-rich water. The nutrient-rich mud from the bottom of the ponds was also used on the fields. At the end of the process, the water would also be released to streams, lakes or the ocean. [2].

The rice farmers in Southern China still use these kinds of eco-friendly systems to grow rice and fish today. According to research from Zhejiang University in China, the rice fish system requires 68% less pesticide use and 24% less chemical fertilizer than the regular monoculture rice system. [4]