

THE DUCKS REVOLUTION TRADITIONAL WISDOM FOR SUSTAINABLE AGRICULTURE

By Kim Assaël

The [Takao Method](#) arose from the use of available resources and observation of what happens in nature. This method took its name from a pioneer organic rice farmer who relied on a less back-breaking labour and thanks to an army of ducks.

Ducks are bred together with the rice; they eat up insects pests of rice as well as seeds and seedlings of weeds harmful for the production and they also fertilize soil organically thus facilitating a healthy and delicious production of rice.

Instead of using chemical pesticides, harmful and very expensive, researchers of the method introduced the ducks as an organic fertilizer and competitor for insects, predators and rice weeds.

Diversification of production with ducks breeding provides a further financial benefit; an integration of diet with proteins of organic meat and a table-meat product to be sold when climate emergencies or damages in annual yields occur. This method is low-cost and labour saving, reducing environmental impacts and increasing food security at the local and regional levels.

The Japanese farmer [Takao Furuno, doctor of the Kyushu University](#) (Fukuoka Prefecture) has successfully experimented a sustainable integrated organic rice farming system by introducing ducks into rice paddies to fertilize and strengthen rice seedlings and protect them from pests and weeds, proving that it is possible for small farmhouses to get a more nourishing and abundant yield, much more resistant to typhoons and continuous floods, reducing environmental damage.

The method requires little care and attention and involves releasing *Aigamo* ducklings into a rice paddy about one or two weeks after the seedlings have been planted. Between 15 and 20 of these birds are needed for every 1,000 square meters of farmland. A shelter is also required so that ducklings can rest and protect themselves from the rain. In order to shield them from dogs, cats, weasels, and crows, the field should be surrounded by fences made of locally available materials.

Research addressed to an in-deep knowledge and dissemination of the method demonstrated that the more suitable species of ducks were the *Aigamo* ones, a crossbreed between wild and domestic ducks (Kamo and



ahiru species respectively), as they do not migrate, are easier to get in Asian countries, eat golden snails which attack rice plants and their meat is very tasty and nutritious.

The ducklings' droppings, as those of some species of fish used in rice paddies in other countries, are an important source of natural fertilizer. In addition, they stir up the soil with their feet and bills, with a process that increases the oxygen content of the soil, making it more nutritious for the seedlings. After years of trial, Furuno's duck-rice system is the result of continuous study of a natural symbiotic relationship and he discovered that the addition of certain fish (loaches) and a nitrogen-fixing weed (*Azolla*) to the field boosted rice and duck growth simultaneously.

The researcher Hiroyuki Morii, at the University of Occupational and Environmental Health (Japan), in addition made his investigations about the methane liberated in the air above the cultivations, finding out that *ducks in rice paddies may control methane released from the rice paddies, which intensifies the greenhouse effect, a main cause of global warming.*

The typical traditional wisdom in agriculture has always sought incomes and food security given by diversification of yields more than monocultures. As in this case, the introduction of ducks in rice fields is cost-effective as farmers do not have to purchase expensive chemical fertilizers or pesticides and crop productivity increases (50% of a small plot). Organic rice can also be sold at a higher price, being an advantage mostly in highlands where the area of a paddy field is so small and, therefore, it is difficult to reduce production costs. Last but not least, the high nutritional quality at the household's level contributes to mitigate malnutrition and when in fall is time to harvest; the ducks have grown fat and can be sold for meat or can fly for reproduction, giving back to nature its vitality. As well it is not of a minor importance that this method contributes to the beauty of the fields' landscape.

Furthermore, thanks to the support of the NGO [Duck and Rice Association, founded by Takao Furuno](#), the method has nowadays made its way to rice-growing countries such as: Bangladesh, Cambodia, China, India, Indonesia, Laos, Malaysia, the Philippines, South Korea, Taiwan, Vietnam and Cuba. More than 75,000 small rice farmers in Japan have been already involved in taking up this method.

To know more

[Detour Japan website](#)

[World Changing website](#)

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[Ministry of Agriculture China website](#)

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[Document in Agroinsight.com](#)

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[Leopold Center website](#)

