

## Integrating poultry, fish and rice to triple income

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Demonstration plot: The model offers multiple benefits. — Photo: Special arrangement

Instead of growing only a single crop, farmers can try and diversify agricultural activities like dairy, bio-gas, mushroom, fish, poultry, silkworm rearing, or apiary along with crops to get a higher income. This also helps in effective recycling of waste products from the animals and birds as manure for crops and cuts down input cost to a major extent.

### Feasibility

The feasibility of such a model integrating rice/fish and poultry was taken up by Annamalai University, Tamil Nadu, and its impact on the farmers' lifestyle is being studied for the last 15 years. It was found that the model, apart from being helpful in generating some revenue, also helps in weed control by 40 per cent, and pest incidence by 30 per cent in paddy crops.

"The model was field tested in different villages during 2004-07. At present it is being implemented in Cuddalore, Villupuram and Nagapattinam districts. Nearly 600 farmers have adopted this model in the last five years, and the annual income of these small cultivators has gone up from Rs. 30,000 (only crop cultivation in 1-2 acres) to Rs. 60,000," says Dr. R.M. Kathiresan, Professor and Head, Dept of Agronomy, Faculty of Agriculture, Annamalai University.

Resource-poor farmers adopting low input agriculture are the main beneficiaries of this system. The simple reason is that it offers multiple benefits like bio-control of pests, infestations, weeds, and better crop growth because the fish feed on the pests and insects attacking the rice plant and poultry droppings are constantly washed into the field making it more fertile and conducive for healthy crop growth.

### Why this study?

But why did the University take up fish and poultry with paddy cultivation? "There is plenty of data available on rice/ fish/poultry integrated model in several Universities across the country. But if you study closely, you will find that in an acre, a pond would have been dug and a poultry cage erected over it. The paddy crop will be grown in a plot adjacent to this." "There will be no connection to all the three activities. But in our model we have carefully planned to avoid such a gap and implemented it in such a way that all three are connected to each other," says Dr. Kathiresan. He went on to explain how it is different from other models.

## **Easy replication**

Replicating this model is quite easy, according to him. For example in an acre (100 cents) beneficiary farmers are growing paddy in 90 cents. In five cents they grow fishes like grass carp, common carp, roghu, cutla in a trench (one feet depth and width) on one side of the field. In the remaining five cents poultry cages propped up on concrete poles are erected fitted with wire meshes. The cage is erected in such a way that a part of the cage is above the water-filled trench and the remaining part over the paddy crop. A part of the bird droppings falls directly into the water as feed for fishes and the remaining on the fields as manure for the crop.

During single rice cropping season (about 5-6 months) poultry can be reared three times. Common NPK fertilizer schedule for rice is being followed as basal input, but farmers are cautioned not to practice split application of the chemical fertilizers as it may affect good fish growth. Also as plant protection measures, neem kernel extract is used instead of spraying chemical insecticides.

## **Marketing**

Regarding the marketing of fish and birds Dr. Kathiresan says, "We encouraged the farmers to form groups and open a marketing outlet and bank account. The income from the sale of fish and poultry is deposited in the account and later shared." "The University supplied the first batch of chicken and fishes to the farmers and after the first harvest farmers themselves started purchasing them. We have received sanctions to start more such models in the region after receiving a good response from both the farmers and the Government."

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