



A Catch of mrigal

FISH CULTURE AS MEANS OF

ADDITIONAL INCOME TO COCONUT GROWERS

K. MATHEN¹, P. K. THOMAS², T. G. GEORGE³

Maximisation of yield per unit area is a concept gaining more and more importance and acceptance in agriculture. In order to achieve this object in coconut gardens, proper utilization of solar energy and soil resources available in the interspaces between rows of coconut palms by raising selected crops has been recommended over and above the efforts to enhance yield of coconut through proper management practices. Intercropping, mixed cropping and multistoreyed cropping systems are therefore being implemented. Mixed farming with improved varieties of cows like Jersey and Swiss Brown besides fetching additional income through milk, provides nitrogenous fertilizer. It also keeps the small holder occupied during his leisure time, with growing fodder grass as an intercrop, and caring for the cow. Recycling organic wastes also helps in enhancing the productivity of coconut palms. Promotion of pisciculture is another fruitful approach in improving the economic and dietary standards of the coconut cultivator.

Many places in Kerala have fresh water bodies in the form of ponds or canals in between bunds on

which coconut is planted. They offer potentialities of rearing fresh water fishes. The species recommended for pond culture are the carp (*Cyprinus carpio*) introduced from Indonesia, mrigal (*Cirrhina mrigala*) introduced from Kaveri, rohu (*Labeo rohita*) and fimbriata (*Labeo fimbriata*) brought from West Bengal. They dwell at different heights in the water bodies feeding on micro organisms from the column or bottom with the advantageous result that they avoid competition for space and food among themselves. Therefore a larger number of fishes can be accommodated per unit volume of water.

The procedure of growing fish in the ponds is simple. A small pond or canal having an expanse of one cent or more with a minimum water column of three feet can be made use of. In the case of a pond, this area is covered by a size of 8 × 6 yards, 10 × 5 yards or similar other measurements to make 48 square yards. Canals may be 24 × 2 yards, 20 × 2½ yards etc. During summer months, the ponds and canals may be dewatered and the mud from the bottom removed. Outlets and inlets connecting them to other water

1 & 3 Scientists, Regional Station, Central Plantation Crops Research Institute, Krishnapuram 690533,

2 Superintendent, Kerala State Government Fish Seed Farm, Kozhencherry.

to be closed. These precautions are necessary in ponds of predatory fish like *Anabas*. The collection of water in the ponds after the ponds are to be manured with fresh cow-dung at a rate of about 30 kg per cent of waterspread. This is to promote growth of micro organisms which the fishlings can feed. Young ones of the fish are supplied from the fingerling stage from the State Government Fish Seed Farm in Pannivelichira near Kottayam at a cost of Rs. 6-8 per 100, may be stocked to the pond at the rate of 40 mixed fingerlings (of cyprinus, mrigal, rohu & fimbriata) per pond about two weeks after manuring. They are fed with fish meal, say in July/August. Left over food such as banana, tapioca flour and leaf, oil cakes, plantain into small pieces etc. can be supplied to the growing fish. The harvest of the fish can be done during March/April.

A trial of this sort was carried out in 28 ponds (yielding in area from 1 to 3 cents) of Krishna-nagar near the regional station of CPCRI with collaboration from the Department of Fish-



A catch of fimbriata

eries, Kerala in 1975-1976. Fingerlings were liberated in August and harvested in March. The results are consolidated below:

Species	Number		Weight of catch (g)			Recovery	
	Liberated	harvested	total	average	range	%range	number
<i>carpio</i>	375	53	20350	384	150—1200	0—100	14/14
<i>mrigala</i>	465	50	10040	201	75—100	0—73	11/15
<i>rohu</i>	480	2	200		50—150	0—10	1/10
<i>fimbriata</i>	490	92	7230*	102	30—400	0—90	9/10
TOTAL	1810	197					

*Weight of 71 only; weight of 21 not available

The number of fish recaptured in relation to the total number of fishlings liberated was not very high. From individual ponds, recovery was up to 30 per cent respectively for cyprinus, mrigal, and fimbriata. For rohu, it ranged between zero per cent. The low catch was mainly due to unusually heavy rains in the village during the latter part of the year, which resulted in ankle to knee deep water in the village in several places and the escape of the fingerlings. It is also possible that the removal of the predators prior to liberating the fishlings was not scrupulously carried out by the pond owners or subsequent entry of predators into the ponds occurred as evidenced by the catch of *Anabas* and other local varieties of fish along with

the introduced ones, at the time of harvest. On a pond-wise analysis, in a total of 28 ponds, two maintained all the four species, three retained only three of them, seven gave a harvest of only two species, five yielded only one species each, while five of them contained none when all the four were liberated. One pond retained two out of three and three ponds maintained one out of two species liberated. Harvest record of two ponds was not available. Cyprinus grew up to a maximum weight of 1.2 kg. in seven months' time. This is very promising and suggestive of very profitable returns if fish culturing is undertaken on a more scientific basis, with adequate care for the food requirement of the growing fish and protection

(Continued on Page 14)