

## FRESH WATER AQUACULTURE

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BY

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Sri Lanka is an island located in the tropical zone. It is now the policy of the Government to explore fresh water resources to the maximum, because the economy of Sri Lanka is based on agriculture. Therefore it is necessary to develop agriculture, forestry, animal husbandry, fishery etc. simultaneously. Fish is a good source of much needed animal proteins, where the world average fish consumption is about 10 Kg. per caput per annum. It is not a secret that the price of marine fish in Sri Lanka is comparatively high and is difficult to obtain in the interior parts which lack the necessary transportation and preservation facilities.

Fresh water fishery is a possible solution. There are two principal types of fresh water fishery. One is the catching of fishes, molluscs, arthropods, algae etc. which breed naturally called fresh water fishing and the other is the artificial breeding and stocking of these organisms called fresh water aqua-culture. Fresh water dry fish is a new ingredient in our menu, which is getting more and more popular daily. This saves our valuable foreign exchange and if our people get used to fresh water fish, it would help to increase and develop the export of marine fish. Will it be a failure if our people do not find it suitable as a substitute for marine fish? Definitely not, animal foods can be prepared out of them. As they contain much nitrogen and other macro and micro nutrients essential for the growth of plants, fertilizers can be prepared. Therefore, fresh water fish culture plays a significant role in improving people's standard of living and thus has a valuable place in the national economy.

## Advantages of aqua-culture

For the development of agriculture water conservation is a must. Therefore more and more land is put under water as reservoirs, streams, lakes, ponds etc. Fresh water fish culture is a good means to get a steady return from such land.

Fish utilize intensively the organisms and manure in water concurrently eliminating weeds, and adding purity and natural beauty. If the ponds, are situated in midst of paddy fields (often found in the People's Republic of China) the silt accumulated at the bottom of the pond is a good fertilizer.

In addition integrated fish culture is more advantageous than pure animal husbandry. The conversion rate of fish is higher than that of domesticated animals and poultry, e.g. Grass Carp for 1 Kg. of flesh needs more than 20 Kg. of good quality green fodder while for cattle it is more than 40 kg. of good quality grass.

Also the reproduction rate of fish is high where every Kilogramme weight of a female Carp is able to produce 20,000 to 30,000 fry annually through artificial propagation. The growth rate of fish is also high where a Big-Head Carp fingerling of over 120 grams can reach over 3000 grams after an year's rearing. Thus the annual growth rate is more than 20 times.

Besides, they are easy to raise and control. Their "menu" is easily accessible where most of them require the weeds which are a pest to the farmer. This requires less investment and is blessed with quick returns.

Unlike other animals, the dry and fingerlings of fish are cheap (MINISTRY OF FISHERIES BRINGS THEM TO YOUR DOORSTEP WITH INFORMATION, FREE OF CHARGE) and easy to rear. Fresh water pond fish culture has the advantage over marine fishing because you are assured of the catch. In order to get the maximum amount of fish from a water body, one should pay special attention to the following factors.

(a) Polyculture

It is essential to exploit all the layers of a water body wholly. Different varieties of fish live in different levels of water. Some live on the surface while some are bottom-dwellers. Polyculture (culture of different varieties of fish in the same water body) is a measure for this. But, in order to evade mutual competition for food etc. their feeding habits have to be considered.

Because this requires different varieties of fish the Ministry of Fisheries has already introduced Sarotherodon mossambicus and Sarotherodon niloticus quite successfully. In order to improve further, it has already taken initial steps in introduction Grass Carp, Big-Head Carp Indian Carp etc. and is taking steps to increase the number both by introducing foreign varieties and also by domesticating the existing varieties.

(b) Food

Food of proper quality and quantity is the determining factor for high speed development evading diseases. Fish are no exception to the natural rule of being constantly getting fed with animal and vegetable food from their environment for their growth and maintenance.

Silage is a good source which costs nothing. Most of the weeds which are in abundance in our gardens and which putrify easily are another alternative. As a supplementary feed (specially for fry and fingerlings) poonac and egg-max in small quantities can be used.

(c) Capital construction

Fish requires not only water but also oxygen. Therefore, the pond should also provide the fish with the essential environmental conditions. Otherwise their growth rate will

get retarded even if they are supplied with a balanced ration.

The growth of fish is a complicated process where there are many factors which mutually correlate with one another. Therefore, the transformation of the water body must closely conform to the condition of soil, hydrology, environmental conditions etc. Still, under no circumstance a high yielding paddy field should be converted to a fish pond.

(d) Fish diseases and pests

Prevention is better than cure should be stressed mostly in fish culture. It is extremely difficult to treat a diseased fish in its environment. In addition they are easy to get attacked by insects and predators or to be infected by pathogens. Therefore, disinfection of pond, fry, feed etc. is necessary.

Therefore by improving the favourable conditions for the growth of fish and nullifying the unfavourable elements the average out-put per unit area could be increased. The Ministry of Fisheries will always give you advice on these matters.

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