

STRATEGY FOR DEVELOPMENT OF INLAND FISHERIES
RESOURCES OF PAKISTAN

by

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Abstract

Little attention has hitherto been paid to the development of inland fisheries in Pakistan, but the causes of the slow development of this sector have now been identified as lack of trained manpower, inadequate research facilities, shortage of fish seed, lack of fishing and marketing technology and the poor socio-economic conditions of the fishery. The identification of these bottlenecks has permitted the drawing up of the development strategies described in the paper.

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1. INTRODUCTION

Food technologists and agricultural scientists are greatly worried that the time is not far away when populations will outgrow the present food resources. The Third World Food Survey has shown that 10-15 percent of the world population is undernourished and about one half suffers from hunger and malnutrition. All over the world there is increasing stress on the production of food through aquaculture.

The diet of people living in Pakistan, like most of the developing countries is protein-deficient. In Pakistan pasture land is limited and the possibilities for increasing animal protein production from sources other than fish are not promising. Fish protein has a high caloric value and includes all the essential amino acids and minerals.

The country has extensive land waters in the form of rivers, streams, canals, lakes, natural depressions, water-logged areas and village ponds. Its canal system is one of the largest in the world. There are two dozen dams, whose reservoirs have a total area of millions of hectares and which have increased the potential for fishery development. In addition to these sub-tropical resources there are good trout waters in the North-western Frontier Province.

The fish fauna is rich and as many as 110 species of freshwater fish are found. Out of 110 species, 20 fishes are edible. The carps, *Labeo rohita*, *Catla catla*, *Cirrhina mrigala*, *Barbus (Tor) punitora* and *Cyprinus carpio* can be farmed.

In the past two decades the government has been preoccupied with the development of the agricultural sector and little attention has been given to the development of fisheries. In recent years, however, the government has realised the importance of this sector and special attention is now being paid to it. An FAO Policy Study Mission on Fisheries visited Pakistan in 1974 at the request of the government to survey the development potential of the fisheries of the country and to suggest ways and means for their proper management.

The problems and bottlenecks for the slow development of fisheries are now recognised as a lack of trained manpower, inadequate research facilities, shortages of fish seed, lack of proper transport, outdated gear, spread of aquatic weeds, lack of storage and marketing facilities and the poor socio-economic condition of the fishermen community. Development goals have now been set and the development strategy carefully planned to solve these problems and achieve the desired results.

2. DEVELOPMENT STRATEGY

2.1 Increased facilities for research and planning

The management and development of inland fisheries has suffered in the past because of the lack of properly trained fisheries personnel. At present, there is only one Government Fisheries Training Centre functioning in Punjab and even this has no properly qualified and trained staff. The Centre is being strengthened to meet the demands of expanded training facilities. The Training Centre has also launched a mass motivation campaign, for the promotion of aquacultural practices in the rural areas. This is proving to be useful. There is only one Fisheries Research Institute in the country (in Punjab) which has skeleton staff and facilities and is tackling problems confronting development work. This is being further extended and enlarged. An FAO/UNDP sponsored Inland Fisheries Research and Training Institute is also being established which would cater for the needs of training and research of the country.

2.2 Management of natural and artificial water bodies

The proper conservation, exploitation and restocking of natural water bodies is being planned. A programme has also been formulated for full-scale development and exploitation of man-made lakes and reservoirs.

2.3 Fish culture

2.3.1 VILLAGE PONDS

Common-property village ponds have been identified as an important potential location for fish culture. In Punjab province alone 12,000 acres of village ponds could be used for fish culture and similar resources exist in Sind Province.

The management of these ponds is being undertaken in collaboration with the Integrated Rural Development Programme and the People's Works Council.

2.3.2 COMMERCIAL FISH FARMING

A large potential exists for fish production from commercial scale aquaculture in the private sector. To promote this, farmers are being given incentives like free fish seed, subsidies and free technical advisory services.

2.3.3 CULTURE OF EXOTIC FISHES

Suitable species of exotic fishes such as common carp (*Cyprinus carpio*), Chinese grass carp and *Tilapia* are being introduced in places having proper ecological conditions.

2.3.4 FISH SEED PRODUCTION AND DISTRIBUTION

The shortage of fish seed has badly affected stocking programmes and the development of large-scale fish culture. The local carp breed in flood waters but do not breed in confined waters. Taking the fish seed from natural breeding areas has been tedious, expensive and time-consuming process.

Fish seed nurseries and supply depots have been established in each district of Punjab each with a capacity of 100 000 fish seed. A modern hatchery is being constructed with a total capacity of 3 million fish seed through induced breeding of local and exotic breeds of carp. The establishment of two more hatcheries and more nurseries is planned during the next five-year plan. It is thus hoped that the fish seed supply problem would be effectively solved in the near future in the Punjab and plans are afoot to extend the programme to the Province of Sind.

Along with the fish seed production specialized transport facilities are also being created for supplying the fish seed to fish culture sites.

2.4 Control of aquatic weed and improvement of potential water areas

Approximately 200 000 acres of potentially productive waters are infested with aquatic weeds. The weeds include submerged, emergent and floating plants, *Eichornia speciosa*, *Trapa bicarnis*, *Nymphaea lotus*, *Impomoea reptans*, *Potamogeton pectinatus*, *Potamogeton orispus*, *Vallisneria spiralis*, *Scripus* sp., *Typha angustata*, etc. They could be eliminated by three methods, chemical, mechanical and biological. The chemical method is inapplicable for a number of reasons. The mechanical method has been employed for many areas but is very expensive and time-consuming. Biological control has universal appeal and is being practised in many countries. The Chinese grass carp has lately attracted much attention for its weed consuming propensities. It was recently imported into Pakistan from the People's Republic of China and is being reared for introduction into various waters as soon as it attains suitable size.

2.5 Improvement of gear, marketing, cold storage facilities and socio-economic condition of the fishermen community

Little attention has been paid toward the improvement of gear technology, probably because most of the fishermen are illiterate, although efforts are now being made.

Hygiene and the quality of the fish sold have improved. In some cities new markets have been constructed and a number of cold stores have been commissioned.

To improve the socio-economic conditions of fishermen communities cooperative societies have been established and efforts are being made to save the fishermen from the clutches of middlemen.