



# FISH AND FISHERIES

NEWS LETTER OF THE FISHERIES TECHNOCRATS FORUM - MADRAS

April 1994

Number 1

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## OUR INSIDE STORY

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We live in an era of technological revolution. Inspired by the success of the green revolution and rapidly advancing fisheries ('blue' or 'aqua') revolution, a few senior fisheries specialists based in Madras, India, thought that it would be useful to establish an association of fisheries personnel, primarily to address the concepts, ideals and conflicts related to fisheries development in the country. Accordingly, THE FISHERIES TECHNOCRATS FORUM, MADRAS, was registered as a society during early 1992. One may wonder why use the term 'Technocrats'! Yes, that is hitting the nail on the head! The name itself is meant to highlight the basic philosophy of the society, i.e., encourage free and frank exchange of knowledge, information and experience on various aspects of fisheries development, without bureaucratic and other conventional influences.

The Fisheries Technocrats Forum is geared to function as a unique non-governmental organization. Its main asset is the group of highly qualified and experienced specialists well-grounded in most, if not all, disciplines of modern fishery science. After overcoming the initial teething troubles, the Forum is now in the process of building up programmes to address the more important problems affecting rational development of fisheries in the country. Serious consideration is being given to organize a seminar on "Fisheries- A Multibillion-Dollar Industry" in the near future. The target group for this

exercise is potential investors. Other issues in the pipeline include, *inter alia*, preparation of investment plans, the urgent need to encourage fish production for domestic markets, bio-programming with due consideration to the environment and socio-economic factors, development of fishing industry components with appropriate conservation and over-fishing safe guards, the multifarious pollution problems-with reference to fisheries resources, resource management, manpower development, comprehensive national and state level fisheries policies and plans etc. During early 1994 it was suggested that the Forum may explore the possibility of producing a quarterly newsletter. The main constraint for this was the lack of finance. However, the keen desire and interest of the members gave positive directions and we are indeed happy to present this inaugural number as a humble precursor to the Forum's ambitious future programmes. We are deeply indebted to all who helped us to start this venture. Special gratitude is due to The Sirago Fish Seed Farm, Neringipettai, Periyar Dt., without whose help this publication would not have been possible. We look forward to unstinted cooperation, guidance and help from all wellwishers and friends in our ambitious programmes, which will be directed to benefit the Indian Fisheries Industry in its march towards the year 2000. With such an objective in mind, we dedicate this first issue of our newsletter to 'professional collaboration'.

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## IS AQUACULTURE MORE SINNED AGAINST THAN SINNING?

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There has been a recent spurt in the development of shrimp farming as a lucrative industry in India, as could be observed from reports received from several large-scale corporations and notices appearing regarding stock market issues. Simultaneously, reports of multifarious protests from environmentalists, voluntary organisations, local committees, farmers, fishermen etc., have also significantly increased.

It is understood that most of the villagers of Quaid-e-Milleth district in Tamil Nadu are very much concerned about the increase in the number of shrimp farms planned in the locality. The major areas of concern relate to the conversion of cultivated (paddy) lands into salt-water shrimp ponds, the threat caused to the eco-system by the effluents from the ponds, flood water threat to the villages caused by bunding off the ponds and socio-



economic ramifications. The shrimp farm promoters, however, do not accept any of these contentions. So the fight goes on! Who is the real sinner?

The bottomline of the issue relates to the fact that the basic philosophy of aquaculture is provision of favourable environment for the cultivated organism in order to maximise the survival and growth rate and thus optimise the production level. Under this philosophy both the development programme and environment protection have to proceed hand-in-hand. If all aquaculture promoters appreciate this basic philosophy, such conflicts would not arise. We therefore appeal to all concerned, not to kill aquaculture development by faulty planning and management methods. Please do the bio-programming and designs with due consideration for the eco-system and socio-economic impacts. Any unbalanced compromise on these aspects will adversely affect the future of aquaculture in this country.

When aquaculture projects are planned and designed, the financial analyses alone would not suffice. In order to ward off negative environmental and social impacts,

it may be necessary to suitably adjust the production systems and goals. In order to achieve sustainable aquaculture development the promoters should appreciate the basic planning requirements, viz.,

- (1) get correct information on biological, technological, legal and socio-economic aspects and
- (2) at the bio-programming stage itself due consideration should be given to the influence of the environment on the proposed farm and the possible positive and negative impacts on the environment.

Aquaculture as an industry has a bright future in India, provided the developers take care not to kill the "golden goose"! What we want is development of projects which will last indefinitely and not for 5-7 years as some 'sinners' appear to think!

—Dr. V. Gopalakrishnan.

**Note:** If you need expert assistance in bioprogramming for aquaculture projects, please contact THE FISHERIES TECHNOCRATS FORUM, MADRAS. —Ed. Comm.

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## POST HARVEST CARE OF FISH

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Side by side with efforts for increased production of fish, emphasis should be on increased utilisation through proper hygiene, sanitation and handling at the initial stage. Globally the quantity of low-priced and not-so-popular species of fishes, which constitute wholesome protein resources, is estimated to be about 10% of the annual fish catch, contributing 8 to 9 million tonnes. The processing and utilisation of such fish is engaging serious consideration throughout the world.

There are various avenues available to reduce post harvest fishery losses such as preservation in ice, chilling, freezing, innovative methods like salting and drying and innovative processing like production of mince and sausage. Fish ensilage, meal and oil of therapeutic value in the treatment of cardio-vascular diseases and rheumatoid arthritis are by-products that can be obtained from wastes of the fishing industry.

**Fresh fish:** For fresh fish consumption plenty of ice should be used, after gutting and washing, to keep at bay bacterial multiplication and resultant spoilage. Packing of iced or chilled fish in insulated fish transport boxes, with ambient carbon dioxide, has been found to enhance the shelf life. Of all methods tried so far, Potassium sorbate as a 3% dip seems to hold promise in controlling bacterial and fungal growth.

**Refrigeration of fish:** Storage of fresh fish, chilled fish and iced fish and its transport under low temperature has been increasingly adopted, especially for distant markets. Rapid freezing of the dressed fish, proper packaging and constant low temperature in the cold storage are the watchwords in freezing fish. Shelf life of frozen fish can easily be six months. Use of antioxidants at the freezing stage is advisable in the case of fatty fishes.

**Cured fish:** Salting and drying or plain sun drying of small sized fishes are traditional methods of fish preservation and can be cost effective. Improvements like solar rack drying, tunnel drying, kiln and chamber smoking, all focus on proper handling, sanitation and removal of moisture under controlled conditions of temperature, air flow and humidity.

**Canned fish:** This is the most wholesome ready-to-eat method of preservation but the cost of processing and packaging material could be a deterrent. Use of retortable foil pouches instead of cans, may be the solution to this problem.

**Mincing fish:** This is an area with tremendous potential for improving the yield from less popular varieties of fishes. Technology and equipment for mincing are readily available. The fish mince can be preserved in the fresh form by freezing or be cooked and canned or frozen, or be salted and dried to yield fish cake.



**By-products:** An innovative and low cost processing of fish and fish wastes is by making ensilage, by bacterial fermentation or use of enzymes or acids. The ensilage can be used as feed in aquaculture.

Technology for making fish meal, oil, fertiliser, pet food, chitin, glue etc. is readily available. The more common value added fish products are fish hydrolysate, roller dried fish, fish protein concentrate, noodles, pickles and soup powder.

— S.T. Chari

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## MARINE NATIONAL PARKS

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Till recent years there has been a general feeling that the resources of the sea are so immense as to be virtually inexhaustible and there is little need of protection. Unregulated harvesting of the sea has already endangered the stocks of certain fishes and other organisms. Public indignation about pollution has been gradually increasing and conservation is replacing wanton exploitation. One manifestation of such measures is the concept of marine parks.

A marine park, in principle, should cater to both conservation of wild life and recreation. The basic criteria for establishing marine parks include location, clarity of water, undersea landscape, flora, fauna, pollution and safety of tourists. A properly designed marine park should provide opportunity for the visitors to study the environment and appreciate the need for conservation. Further, the designated area should protect examples of all habitats such as sand flats, mud bottoms, man-

*Contd. on page 4*



*That's a  
Good Haul!*

*Courtesy :  
BOBP, Madras*

### DO YOU KNOW?

- ☛ The ornamental fish industry in India is developing at a very fast rate and the future potential appears very bright.
- ☛ Breeding ornamental fish could become a very profitable activity in rural areas, as evidenced by recent developments in West Bengal.
- ☛ Export of ornamental fish from India may soon reach Rs. 100-lakhs figure.
- ☛ Within India the ornamental fish trade is reported to be in the region of Rs.5 to 7 crores per year and the turnover figure can easily increase to more than 20 crores.
- ☛ Some of the special and rare species of ornamental fish may cost more than Rs.20,000 per fish.



grove swamp, coral reef etc. The park should be so designed as to provide opportunities for ecological and other related studies as well as maintaining brood stocks of threatened organisms.

Visitors to marine parks generally view the underwater scenery from glass-bottomed boats or by swimming or diving. Some parks in U.S.A. have self-guiding underwater trails and cable cars. Dominant sessile organisms are generally provided with identification marks on concrete blocks, which are visible from the surface.

Conservation of marine natural resources in India is still in a primary stage. The Govt. of Tamil Nadu has named the Gulf of Mannar as a 'marine park', but human destructive activities are gradually denuding the area! The fauna and flora of the Gulf of Mannar and the

Palk Bay are the richest in India. The Krusadi and the chain of twenty islands, with several reefs and shallow waters in this region harbour a variety of animals and plants. The Government has constituted an inter-departmental committee to develop this 'marine park' with effective administrative, management and conservation programmes. The Global Biodiversity Convention which has come into operation on 29 Dec. 1993 stresses the strategy of in-situ conservation of habitats for the protection of the biological wealth of the world. The Palk Bay-Gulf of Mannar area is now under great stress and we trust that immediate action will be taken by the concerned authorities to ensure that the 'marine park' concept will be strengthened in the region and the regulations strictly enforced.

—Dr. A.G.K. Menon

With Best Compliments from:

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**FISH AND CHIPS!**

**Quotes from some recent reports:**

Tamil Nadu is the second largest producer of marine items, exporting more than 10,000 tons of (marine) products, worth more than Rs.240 crores in Foreign Exchange.

Tamil Nadu has plans to establish a Rs. 100 crore Centre of Excellence in coastal shrimp farming.

Indian Government proposes to establish a Brackishwater Aquaculture Development Authority to assist, coordinate and monitor different aspects of prawn farming.

The potential area for shrimp farming in India is estimated as 2.5 million ha and the present utilization is less than 5%.

Tamil Nadu Government proposes to establish a Rs.15-crore Palk Bay Fisheries Rehabilitation Scheme, which would involve fisheries and shrimp farming activities.

An all-women prawn farming establishment with decentralised production and centralised extension services is being set up in Karaikal, Pondicherry Union Territory.

The main problem in this country (India) is the urge to make a fast buck and quality is the casualty.

The Tamil Nadu Government proposes to set up an oceanic museum near Madras at a cost of Rs 25 crores.

Under a scheme sponsored by the National Cooperative Development Corporation, loans amounting to Rs. 10 crores would be provided to about 1,500 fishermen in Tamil Nadu for setting up prawn farms.

The country (India) has become the biggest dumping ground of wastes in the entire world. Multinationals, whose technologies has been banned in their parent countries, are tampering with India's fragile eco-system and go scot free.

<p><i>With the compliments of:</i></p> <p><b>K. Chidambaram</b> 12, 1st Main Road, Karpagam Gardens, Madras-20</p>	<p><i>With the compliments of:</i></p> <p><b>Smt. K. Saraswathy</b> 2054E, IInd Avenue, Anna Nagar, Madras-40</p>	<p><i>With the compliments of:</i></p> <p><b>Dr. V. Gopalakrishnan</b> 37A, Rukmani Road, Besant Nagar, Madras-90</p>
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**The Fisheries Technocrats Forum**

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