

MPEDA *Newsletter*

JULY

2010



**THE MARINE PRODUCTS EXPORT
DEVELOPMENT AUTHORITY**

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MPEDA NEWSLETTER



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Contents

Marketing News

MPEDA Awards First Quality Logo to
M/s Nila Seafoods Pvt. Ltd. 00

Insulated Fish Boxes Distributed Under
MPEDA Financial Assistance Scheme 00

Global Economic Woes to slow Export Growth:
Dr. Rahul Khullar, Commerce Secretary,
Ministry of Commerce & Industry, Govt. of India 00

Focus Area

Mass production of Artemia Biomass and
Artemia Cysts through Aquaculture by RGCA 00

'Kolachil' Fishing – A Destructive Fishing Method Prevails In Kerala Waters 00

Quality Front

Bacteriophage therapy - Trend in Aquaculture 00

Aquaculture Scene

Inaugural Harvest Function of Seabass Cage
Farming Held at Alvekodi, Kumta (Karnataka) 00

Farmers' Meet on "Abuse of Antibiotics in
Aquaculture" conducted at Navsari, Gujarat 00

Report on the visit of Chairman ,MPEDA to
West Bengal 00

Scientific Support for Pond Construction Helps Freshwater Fish Production 00

News Spectrum

Fish Workers Forum to Protest against Kochi Port 00

UNIDO's 'Traceability System' Ensures Quality of Bangladeshi Seafood 00

Asthma Patients Queue up to Take Fish Medicine? 00

Fishermen Warn of Agitation 00

Malaysians Largest Consumers of Seafood in
Southeast Asia 00

MoEF Floats New Rules for Breeding,
Selling Aquarium Fish 00

Fisheries Need A Separate Ministry: Kalam 00

Matsyafed Launches Food Supplement Tablets 00

Forecast: No Fish By 2050. Time For Aquaculture 00

Trade Enquiry 00

MPEDA Awards First Quality Logo to M/s Nila Seafoods Pvt. Ltd.

The MPEDA Logo Scheme envisages according a special recognition for Indian marine products to project the superior quality of the products. The Logo promotion also creates an “India” Brand image among the buyers and consumers and this branding will give our Indian products a competitive edge in the international market. It is also worth mentioning here that this is a purely optional/voluntary scheme for the seafood processors. This is also an independent scheme distinct from any other existing statutory/compulsory inspection procedures required for export of products from India by the Government under the Export (Quality Control & Inspection) Act 1963.

MPEDA's Quality Logo, has been registered with the Trade Mark/Copyright and Registration in India. Subsequently registration of the Logo has been done in all the three major markets namely USA, European Union and Japan. MPEDA has also planned a number of Brand Equity Schemes based on using of this Logo in international markets.

In terms of quality the logo affixed products will be superior to others. In organoleptic and bacteriological terms the product meets higher standards. Commercially important parameters such as net weight, grade, uniformity etc. receive special consideration in logo based products. The packing material used will also have to meet international norms. The processor has to put in additional efforts and cost to ensure that the product comply with the requirements for affixing the logo and MPEDA is sure that the



customer will pay a higher price on being satisfied with the superior quality product affixed with logo.

M/s. Nila Seafoods Pvt. Ltd., Tuticorin is the first manufacturer exporter in India to be awarded with the logo. The company possesses one of the most sophisticated and best processing plants in India and they are striving to constantly improve their infrastructure and products. “Nila” which is a popular brand in the Japanese market enjoys customer confidence and with the affixing of the logo the product get elevated to a still better position in the minds of the customers. Initially Nila will be affixing the logo on consumer packs of H/L Flower in raw form as well as

blanched. The tray packed consumer packs of the above products of Nila affixed with the MPEDA quality Logo is a milestone in the history of seafood exports from India. MPEDA through its market promotion division and its Trade Promotion Office at Tokyo will initiate logo promotion programmes in Japan. The programme will assist M/s. Nila Seafoods as well as the wholesalers and retailers in the Japanese market in projecting this product among the customers. Thus superior quality will be ensured from catch to table.

M/s. Nila Seafoods Pvt. Ltd., Tuticorin is the first processing plant accredited with the MPEDA quality logo. Ms. Leena Nair IAS, Chairman,

MARKETING NEWS

MPEDA has presented the MPEDA quality logo to Shri D Chandran, Managing Director, M/s Nila Seafoods Pvt. Ltd. in the presence of

Mr. Tatsushi Kuroda of M/s. Aeon Retail Co. Ltd. and Mr. Ken Ibuka of M/s. Kitajima Fuifan Company Ltd. were also present.

especially the sea caught white and flower shrimp. The flower of this region is unique in all respect and demands a prime price in the international market without fluctuation, even when farmed shrimps are subject to price fluctuation. It is a well-known fact that seawater farmed BT from this region enjoy prime price in the Japanese market and it is high time that such products are exported in consumer packs. Affixing of the logo will further boost up the image of these products in the Japanese market. Wild caught white and flower is preferred by many customers especially in the high end super markets as these are wild caught species. Nila will be soon adopting the logo on many of their products and this will boost up the image of not only Nila but Indian products as a whole. Soon the Indian pink brown which is highly tasty and which is widely used by the Tempura restaurants, will also be packed by Nila with the quality Logo in the coming days.



Ms. Leena Nair, Chairman, MPEDA presenting the Logo to Mr. D. Chandran, Managing Director, M/s Nila Seafoods Pvt. Ltd., Tuticorin.

Shri Elias Sait, Secretary General, Seafood Exporters Association of India (SEAI) on the 1st of July 2010.

M/s Nila Seafoods Pvt. Ltd. is renowned for its fishery of many commercially important species

Insulated Fish Boxes Distributed Under MPEDA Financial Assistance Scheme

NETFISH, Orissa under the aegis of MPEDA is organizing a series of Extension Training Programmes for the benefit of fisher folk in and around CHILKA lake in Orissa. CHILKA lake is the largest brackishwater lagoon in Asia. Commercially important crabs and shrimps (*P.monodon*, *P.indicus*) are the major fishery resources available in this area. Due to the organisation of extensive awareness training programmes, the fishermen have become more interested in the use of insulated fish boxes.

MPEDA, SRO, Bhubaneswar along with NETFISH discussed the matter of distribution of insulated fish



Shri. S.K. Patra, AD, SRO, BBSR & Shri. E.K. Ramesh, Vice President, SEAI, Orissa distributing the insulated fish box to the beneficiary.

boxes to the fishermen with the Principal Secretary to Government, Department of Fisheries and Animal Resources Development, Govt. of Orissa and later with the Chilka Development Authority (C.D.A.), an agency under Govt. of Orissa, looking after the overall development of fisher folk in and around CHILKA. The Principal Secretary had also advised Chilka Development Authority to keep in touch with MPEDA to materialize the scheme of promoting the distribution of insulated fish boxes.

As a result of these efforts, the Chairman, MPEDA has kindly consented to provide 2000 nos of Insulated fish boxes to 2000 small boat owners of Chilka area under MPEDA subsidy scheme through Chilka Development Authority (C.D.A.) in the 1st phase.

The Chilka Development Authority started campaigning for distribution of insulated fish boxes for fisher folk of CHILKA area under MPEDA scheme and during this financial year (2010-11) they have already distributed more than 500

boxes.

In one of the distribution campaign at JAGULEIPADAR of CHILKA area under Utarchilka Primary Fisherman Co-operative Society, on 2nd June 2010, Shri S.K. Patra, Assistant Director of SRO, MPEDA, Bhubaneswar attended the distribution ceremony along with members of Chilka Development Authority, State Fisheries officials and Sri E.K. Rameshan, Vice President, SEAI, Orissa Region and distributed 100 nos of insulated fish boxes to the beneficiaries.

Global Economic Woes to Slow Export Growth: Dr. Rahul Khullar, Commerce Secretary, Ministry of Commerce & Industry, Govt. of India

India's annual export growth in dollar terms has been projected at 15-17 per cent over the next decade, against an average annual growth rate of over 25 per cent in the four years till 2008-09. Addressing an open house for exporters, organised jointly by the Federation of Indian Export Organisations, the Engineering Exports Promotion Council and the Federation of Karnataka Chambers of Commerce and Industry (FKCCI) Dr. Rahul Khullar, Union Commerce Secretary said, "We are all in for a bout of slow, hesitant global economic growth. This means you have to get used to slower growth in India."

Mr. R.S. Gujral, Director-General of Foreign Trade, identified cashew, oilmeal, leather and handicrafts as export sectors "which require more support from the government", adding that "leather was dependent on the European Union". Detailing the risks ahead in the global economic environment, Dr. Khullar said, "How on earth are you going to sustain a 9% growth rate with these risks? For those

who think that exports will grow at 20-25 per cent per annum, that's not happening."

On the effects of the "economic contagion" on the currency market, he said, "in 2007-08, there was a movement towards deleveraging. The same problem persists today. When the stock market is down, the exchange rate is down; when the stock market is up, exchange rate is up." Apart from "market-related risks and exchange rate risks," the Commerce Secretary said, "Sovereign debt will impact decision making. You too will start fiscal consolidation."

Call to Diversify

He said to exporters. "Given the risks, you can't keep throwing money at a problem and solve it. You will have to diversify your market base." Dr. Khullar urged preparedness for the "next wave of reforms, whether they come in the form of lower tariffs or increased competition in the domestic market. There is no way by which you can build a world class competitive

industry in auto at 60 per cent tariffs."

Industry is going to come under pressure. Growth has to come from the domestic market. Reduced tariffs and domestic competition will force you to shape up. Many holy cows will fall by the wayside over the next 10 years. Private participation in defence contracting, cold chain, logistics and retail are the business of the future, he said. Dr. Khullar said that an "industrial shakeout was coming in auto, chemicals and engineering" and that "there are some things you cannot do; the quicker you recognise this, the better."

Mr. Gujral identified the "headwinds" as the prospects of EU recovery; rupee volatility and protectionism in the US. Mr. J. Crasta, President, FKCCI, said exporters were hoping for timely refund of duty benefits and State levies. Mr. A. Saktivel, President, FIEO, said the cost of credit was likely to swell after the adoption of the base rate regime.

Chairman, MPEDA Visits Tuticorin Fishing Harbour

Ms. Leena Nair, IAS, Chairman, MPEDA visited Tuticorin Fishing harbour on 1st July 2010 to review the present condition of upgradation of fishing harbour utilizing the fund sanctioned by MPEDA. Earlier MPEDA has sanctioned an amount of Rs. 41.90

Lakhs (Forty one Lakh Ninety Thousand Only) for upgradation of Fishing harbour, Tuticorin. Chairman inspected the improvements made in the auction hall with granite flooring and instructed the officials to maintain the halls and harbour clean and tidy following hygienic practices.

Chairman also inspected the site where the proposed Tube Ice making machine and chill Rooms are going to be installed and inspected the MPEDA Dry fish godown too.

She received request letter from the Mechanized Boat owners Association and the Mechanized Fishing vessel Labour Association, seeking various welfare schemes from MPEDA. Chairman interacted with Tamil Nadu Fisheries Department officials Shri. Rangarajan, Joint Director of Fisheries, (Regional) Tuticorin, Shri. Jude Armstrong, General Manager, TNFDC Ltd, Chennai Shri. Chelladurai, Executive Engineer, Fishing harbour Division, Nagercoil and Shri. Antony Xavier, Assistant Director of Fisheries (Marine), Tuticorin.

During the Chairman's visit to the fishing harbour, MPEDA officials Shri. K. Rajendramany, Assistant Director, Shri. C.Ravindran, State Coordinator- NETFISH, and Shri.A.Sakthivel, Junior Technical Officer were present.



Ms. Leena Nair, Chairman, MPEDA visiting Tuticorin Fishing Harbour.

MPEDA Participated in INFISH - 2010

The National Fisheries Development Board (NFDB), ever since its inception in 2006, has been executing various programmes to enhance the national fish production (including ornamental fish), fish processing and marketing infrastructure in the country. As part of this campaign, the "Indian Fish Festival" INFISH-2010 was organized by NFDB on 9th to 12th July at the People's Plaza, Hyderabad.

This year the focus was on Aquarium fishes, Value added fish products and Fish processing technologies. The INFISH - 2010 was declared open to public by honorable Chief Minister of Andhar Pradesh, Shri Rosaiah. Prof. K.V. Thomas,



Inaugural function of INFISH - 2010

**A view of MPEDA stall**

Hon'ble Minister of State for Agriculture, consumer affairs, food & public distribution presided over the function. The inaugural function was attended by many dignitaries from the State and central governments. MPEDA was represented at the inaugural ceremony by Shri S. Sasidharan Pillai, Director Marketing-in-Charge.

INFISH-2010 had four sections. The Executive area had stalls from Central and State government organizations, Institutes, Universities, Departments, showing the latest technologies available for adoption by the fisheries sector. The Aquarium and ornamental fish stalls also had a similar representation by the Government sector with more

emphasis on training and schemes. There were many private companies, displaying the products and services in the aquarium/ornamental sector. The food court was the major attraction of the show with participation from Government Fisheries cooperatives and private entrepreneurs. Those stalls displayed various kinds of fish food delicacies that included ready-to-eat and ready-to-cook products. The fourth section was for technical sessions on the latest research and market development activities related to the sectors. The cultural events during the evening that showcased the rich diversity of culture within Andhra Pradesh added colour and flavour to the show with their variety and attracted a lot of public.

MPEDA had set up a stall in the Aquarium section with a view to popularize ornamental fish trade in the region and deputed Dr. Satish Sahayak, Programme Manager (OFD), MPEDA,RO, Chennai and Shri Melvin John, Assistant Programme Manager (OFD), MPEDA,HO to organize MPEDA's participation in the show. The activities of MPEDA in ornamental fish sector were prominently displayed in the show through LCD TV projections and posters. Leaflets were also distributed. MPEDA publications on the Ornamental fish put on display at the stall were well received by hobbyists, fisheries officials, academics, students and entrepreneurs. The VIPs who visited the MPEDA stall included Central & State Ministers, fisheries officials, academic staff, in addition to general public. There were enquiries regarding the Ornamental Fish assistance schemes and other schemes operated by MPEDA.

The valedictory function was held on the 12th July 2010 evening. The Chief guest for the function was Dr. N. Raghuvendra Reddy, Hon'ble Minister of Agriculture, Government of Andhra Pradesh. Shri K. Pardhasaradhi, Hon'ble Minister of Animal Husbandry, Dairy & Fisheries, Government of Andhra Pradesh presided over the function. In short INFISH has succeeded in creating an awareness about the activities associated with and opportunities offered by the fisheries sector in the region and MPEDA could well be a part of that mission.

Seminar on Responsible fishing and Inauguration of NETFISH Helpline

Considering the growth in the mobile users, NETFISH has chosen IFFCO Kisan Sanchar Limited (IKSL) as the channel partner to reach the fishing community. An MoU has been signed between the two with an aim to

propagate NETFISH messages on fish quality management, conservation of fish resources as well as sustainable fishing among the fisherfolk. IKSL, a joint venture of Indian Farmers Fertilizer Cooperative Limited and

Bharti Airtel Limited, offers products and services designed for farmers and fishermen.

In connection with the inauguration of the new venture, a seminar was conducted by NETFISH

MARKETING NEWS

on 25th June 2010 at Krishi Vigyan Kendra (KVK), Njarakkal in association with IKSL & KVK. Dr. K.A. Unnithan, Scientist-in-Charge, KVK, Njarakkal welcomed the distinguished guests and other participants. The programme was inaugurated by Mr. P P Surendran, DGM Matsyafed and was presided over by Dr. Joice V Thomas, Chief Executive, NETFISH. Inaugurating the 'NETFISH Helpline' for fishers, Mr. K G Luke, State Manager, IKSL handed over the 'Mobile Handset' and 'SIM card' to CE, NETFISH. Mr. N.L George, Sales manager, IFFCO conveyed the vote-of-thanks. The inaugural session was followed by a seminar and discussion lead by Smt. Aliamma Kuriachan and Dr. S. Shassi, State co-ordinators NETFISH. Lectures on hygiene and sanitation in Pre-processing centres, responsible fishing, hygienic handling of fishes onboard and harbour, etc were delivered to the participants. NETFISH leaflets were distributed among the participants.

IKSL provided free 'Greencard' mobile connections to the



Inaugural speech by Mr. P.P. Surendran, DGM, Matsyafed

participants. The Greencard customers will receive 5 free voice calls in Malayalam on daily basis. The voice calls will be information provided by NETFISH on fish quality management, sustainable fishing, conservation of fishery resources as well as other fishery related aspects such as weather forecasting, potential

fishing zone etc. The customers also have call back facility to listen the last 5 messages recorded at any time. They can also make use of the NETFISH helpline to derive answers to specific queries related to fisheries and allied subjects. More than 60 participants including fishermen and peeling workers from the nearby localities made use of the programme..

Mass production of Artemia Biomass and Artemia Cysts through Aquaculture by RGCA

Artemia Biomass has been commonly used over the years as feed for Fish larvae and Shrimp Broodstock. Artemia biomass that is produced by growing the Artemia nauplii to adult sizes has an enviable nutrient profile and is greatly accepted by the growing fish larvae by Aquarium Fish breeders and commercial Marine finfish hatcheries. It is also widely used in Shrimp hatcheries where it is fed to the brooder shrimps as a part of the maturation diet.

Rajiv Gandhi Centre for Aquaculture (RGCA) has successfully demonstrated large scale production of Artemia Biomass and Cysts at the Pilot Scale Artemia Project located at Tharuvaikulam in Tuticorin. The Artemia cyst and biomass produced from the Pilot scale facility over the last two years was found to have nutritional profile and properties that are comparable/better than the conventional wild harvested Artemia cyst being imported from USA.

The Biomass produced at (RGCA) is reared in hyper saline conditions (above 100 ppt) and as such is free from the viral and bacterial pathogens that could infect/infest in them at regular salinities. Therefore these could also be safely used as feed for breeding shrimps and ornamental fishes. Owing to the high demand for Artemia Biomass among fish breeders, RGCA has begun to market the same in frozen packets, presently at a promotional price of Rs. 150/ Kilogram.

Ms. Leena Nair IAS, Chairman MPEDA and President, Rajiv Gandhi Centre of Aquaculture visited the Pilot scale Artemia project of RGCA located in Tharuvaikulam, Tuticorin

on 1st July 2010 for initiating measures to disseminate the technology developed at the facility to SHGs interested in taking up Artemia cyst and Biomass production. The President was accompanied by Shri. Y.C.Thampi Sam Raj, Project Director RGCA, Shri. Renga Raju, Joint Director of Fisheries, Tamil Nadu and other officials from the Department of Fisheries, Govt. of Tamil Nadu.

Shri Y.C. Thampi Sam Raj, Project Director, RGCA explained the purpose of setting up the Pilot Scale Artemia project in Tuticorin and also briefed on the activities of the project. During the visit of the President, the RGCA technical team demonstrated the production technology, preprocessing, processing and packaging of cyst and biomass and reported that the project is receiving orders from ornamental aquarists and shrimp hatcheries for Artemia cyst and biomass from RGCA.

After making a thorough review of the Project, the President suggested to upkeep the quality of the products produced at the Project by:

1. Carrying out frequent nutritional and quality analysis of Artemia cysts and Biomass produced at the facility in order to ensure that only high quality of produce is made available from the project.



Ms. Leena Nair, IAS, Chairman, MPEDA & President, RGCA observing the Artemia cysts

2. Regularly obtaining feed back from the users of Frozen Artemia biomass & Artemia Cysts from RGCA facility in order to assure quality standards of the product.

The President also inaugurated the fully automated nitrogen filled vacuum can packing unit installed at the project for packing dried Artemia cyst. Shri. A Jayapal, President, Tharuvaikulam Panchayat, called on the President Ms. Leena Nair IAS, and requested to arrange taking up Artemia culture in Tharuvaikulam through Self Help Groups (SHGs). Accordingly the President instructed that a draft project proposal be made for taking up culture of Artemia through schemes available for SHGs. Discussions were also held with the officials of Tamil Nadu Fisheries Department in order to initiate action for taking up Artemia culture through SHGs.

'Kolachil' Fishing – A Destructive Fishing Method Prevails In Kerala Waters

Joice V. Thomas, Deepu A. V., Afsal V. V, Aliamma Kuriachan & Mustafa Network for Fish Quality Management and Sustainable Fishing (NETFISH)

A wide array of fishing gears and practices ranging from small-scale artisanal to advance mechanized systems are used for fish capture in Kerala. Over the years, traditional fishing gears have given way to newer more efficient fishing systems. Highly efficient and unsustainable fishing practices lead to the over exploitation of resources. Marine fisheries are at cross roads now with the introduction of bigger sized fishing units, indiscriminate fishing and thereby drastic depletion of fishery resources. The inshore waters are under heavy or exhaustive fishing pressures which resulted in the depletion of many major fish resources. While there is no scope for increasing fishing pressure in the coastal areas up to 50m depth zone, steps are already been taken to catch the few deep-sea resources which are presently underexploited. Many destructive fishing practices like bottom trawling, ring seining, poisonous fishing, blast fishing and fishing operation in the breeding grounds, destruction of Mangrove vegetation and coral reef ecosystem have also contributed much to the depletion of fish stock. Strong competition prevalent in the fishing sector in introducing big sized fishing vessels equipped with high speed engines increased the pace of depletion of fish resources. It is high time that the Government authorities come forward to root out these harmful fishing techniques in vogue, to prevent the extinction of major fish resources or to salvage these species from perdition. The most recent and highly destructive fishing technique practised in Kerala waters is the 'Kolachil' fishing which is more predominant in Malabar region (north Kerala).

'Kolachil' fishing in the Malabar region

The abundant cuttlefish resource of the Malabar Coast is exploited by a new fishing method called 'Kolachil' fishing'. The name 'Kolachil' fishing is evolved from the Malayalam name of the part of coconut tree which is mainly used to form the structures with a view to attracting fishes particularly cuttlefish. Large number of boats from Kanyakumary and Kolachil region of Tamil Nadu state come to the Malabar Coast for "Kolachil fishing" and catch huge quantities of cuttlefish. This fishing method is mainly found in Chakkumkadavu and Kappakkal region of the Kozhikode district and Valapatnam in Kannur district. Currently, about 30-40 fishing units are operating in these regions. It is also seen in the southern part of the state especially in the marine waters of Kollam and Thiruvananthapuram districts.

Structure

The part of the coconut tree known as 'Kolachil' (flower after removing the tender coconuts) is the main part of this fishing technique. 35-40 Kolachils are tied together with a nylon rope as seen in the figure below and are deposited in the water column at a depth of 15-45 meters anchored with sand filled plastic sacks. Sand filled sacks will protect these 'Kolachil' structures from being shifted by tides and currents. The position of these Kolachil structure will be marked using GPS.

Fishing

The deposited 'Kolachil' will serve as a shelter for ripe cuttlefish to lay eggs and large number of ripe females are attracted towards this. After three to four days of setting of 'Kolachil' fishing unit in sea, fishermen will come back tracing the position marked by GPS and catch cuttlefish using poll and line. The 'Kolachil'



Kolachils tied together with rope

fishing starts from the month of August and leads to March. Each 'Kolachil' fishing unit can be used for two months from which Cuttle fish will be collected in alternative days thereby getting around 15-20 fishing days from each "Kolachil" unit.

Cost of 'Kolachil' fishing

Maximum expenditure to construct a single "Kolachil" fishing unit is expected to be around 3500 to 4000 Indian rupees which is incurred for procuring the items like 40 litres of Kerosene, 5 litre petrol, 5 litter oil, 35-40 numbers of Kolachils for fabricating the structure and the Labour charge of 6 or 7 workers. The expenditure break up for the formation of single 'Kolachil' Fishing unit is given in Table 1. Due to extensive usage of the 'Kolachils' in making an array of fishing units in sea, the rate of single 'Kolachil' has increased to around 3-4 rupees in this region. Therefore, fishermen tend to bring the 'Kolachil' from Kanyakumari and other parts of Tamil Nadu state to tackle the shortage of 'Kolachil' in Malabar region. A single unit sometimes gets a massive catch of 300-400 Kgs of Cuttlefish with an individual size of 1-3 kg which in total fetches to around 25000-50000 rupees in a single day.

Impact of 'Kolachil' Fishing

Merciless removal of ripe cuttlefish by this fishing technique causes drastic depletion of the natural stock. Recruitment of future stock will not be taking place as the adults are attracted to the artificial breeding units and are being removed without giving a chance to lay eggs. This will cause a deleterious effect to the ecosystem as a whole and cuttlefish population particularly. The right of exploitation of fishery resource is open to all but the destructive fishing practices must be averted to conserve our fishery resources for sustainable usage. Among the various fishing



Padals distributed in the Vembanad lake

methods prevailing in the Malabar Coast, 'Kolachil' fishing is the most destructive fishing technique because of the extent of ripe females being destroyed. So far, there is no concerted effort by the concerned authorities to stop the 'Kolachil' fishing. Local boat operators of the Malabar region are always in quarrel with the 'Kolachil' fishermen because the Kolachil deposited in the sea bed is getting entangles in their fishing nets while fishing and makes serious damages to the nets. Since the fishermen engaged in 'Kolachil' fishing in Kerala waters is from the Tamil Nadu state, the present tranquillity prevails among fishermen may also be tampered due to the quarrel between the fishermen of two neighboring states. This definitely points to the need of concerted efforts from the authorized agencies to ban this type of extremely destructive fishing methods at the earliest to protect our sea and its resources.

The 'Kolachil' Fishing technique in Kerala waters is more or less similar to the Padal fishing technique widely employed in the Astamudi Lake of Kerala¹ during nineties. This padal fishing led to the serious social problem of clashes between the local communities which in turn paved the way for the complete ban of the padal fishing by the State Government.

Padal fishing starts in the month of March every year by dumping branches of plant twigs and leaves tied together by a rope, covering an area ranging from 10-30 m², mainly anchored in the shallow regions of the estuary as seen in the figure below. Twigs collected form locally available trees such as *Calpphyllum inophyllum* (Punna) *Anacardium occidentale* (Cashew) and *Mangifera indica* (Mango) were commonly used for making the padal. These padals were operated to catch fishes such as *Etroplus suratensis*, *Penaes indicus*, *Chanos chanos*, *Liza parsia* and *Mugil cephalus*. Large number of juveniles and sub adults of commercially important fishes were removed by this fishing technique which resulted in the conflict between padal fishermen and other fisher folk. The timely intervention of department of Fisheries, Govt. of Kerala could ban this fishing method in Ashtamudi estuary. The strong opposition from the local fishermen really prevented the padal fishing in this estuary, but this practice is partially in vogue in other lakes of the state.

Reference:

1. Thomas, J. V. and Kurup B. M., Padal fishing–A unique fishing method in the Ashtamudi Estuary of Kerala (south India). *Naga*, 2004, 27, 24-27.

Bacteriophage therapy - Trend in Aquaculture

Abhilash EC, Junior Technical Officer, MPEDA-Lab, Cochin

FAO has defined aquaculture as “the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants”. Among aquaculture products, farmed shrimp represents 1% of global fisheries production by weight, and 10% of global fisheries export by value. Almost from the beginning, disease was recognized as a biological threat to the shrimp culture industry, and a number of diseases in shrimp end up with huge economic loss in seafood industry.

Diseases in Aquaculture

The main biological agents that cause water-borne diseases in shrimp are bacteria, viruses, protists and helminths, oomycetes and, to a lesser extent, fungi. However, bacterial diseases are main problems in the expanding aquaculture industry and now a days the causative pathogens were identified by several scientific techniques. But still the remedies against the bacterial infection in aquaculture were at infancy and the farmers have faced huge loss in this regard. Many types of bacteria which are harmful to shrimp belongs to the Genus *Vibrio* under the family *Vibrionaceae*. These are the major genus which are present in the water and related sources like sediments. In

the 1980s farmers from various parts of world reported the attack of *Vibrios* especially *Vibrio harveyi* and *Vibrio anguillarum* in cultured shrimp. Apart from that, seeds and brooders of shrimp are seriously injured by *V. alginolyticus* and *Vibrio anguillarum* etc. The *Vibrio* cause vibriosis and septocaemia in seeds and brooders. Pathogenic and non-pathogenic *Vibrio* may be present in most of seafood and can be identified in laboratories by using Thiosulphite Citrate Bile-Sucrose agar (TCBS).

Antibiotics controlled such pathogens in farms or hatcheries but usage of such antibiotics has seriously harmed the health of seafood consumers. The reports from different countries stated that the use of antibiotics can cause cancer and other serious diseases in human through consumption of food and also it will destroy the natural resistance of human body. As a result of this, lot of antibiotics were banned or restricted in aquaculture by the EU, USA and other countries where the people consumed cultured shrimp/fish. But it is not quite hilarious that they decisively ignored the presence of high concentrations of antibiotics in poultry or cattle farms.

History of Bacterio phage therapy

Bacteriophages or phages are viruses that invade bacterial cells and it was discovered in 1915. In the 1980's due to increasing problems related



Vibrios on TCBS agar

with worldwide emergence of antibiotic resistance in common pathogenic bacteria, such as vancomycin-resistant *Enterococci* and multidrug resistant *Staphylococci*, and concern about spreading of antibiotics in the environment due to anthropogenic activities, there came out the need to find new methods to control bacterial pathogens. There were a few problems that adversely affected the therapy at that time in aquaculture such as host range, proper way of application, detection of specific phages for diseases in aquatic animals etc. and gradually its application has come down.

Findings and latest alterations in the phage therapy

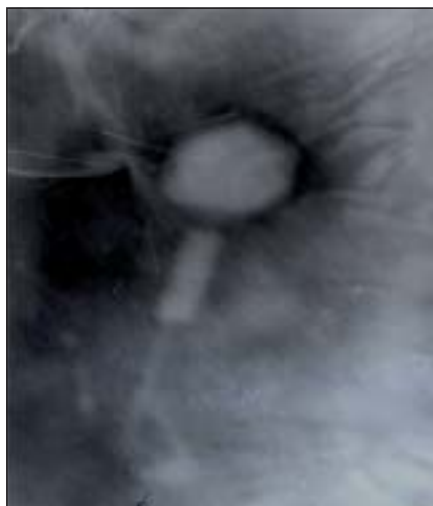
Differing from earlier inventions, the recent research works made alterations in the phage therapy and now it is modified with the following aspects, a) detection of specific-phages towards the target bacteria, b) modification in the way of application, c) mixing up of different phages in



Bacterial infection in fish



Bacterial infection in shrimp



Bacteriophage of Vibrio

single dose, d) concentration of dose, e) Invention of lytic phages etc. Recent studies on phage therapy carried out

by South Asian countries confirmed and stated that gene specific phages completely demolished the bacteria in shrimp farms. The experiments in India concluded that a bacteriophage mixture could be successfully used in protective programmes on shrimp hatcheries as a bio-control. As a result of that, aquaculture sector is more benefited with the therapy and several shrimp hatcheries in the world have reported that bacteriophages especially lytic phages (which completely killed bacteria) are really working against the bacterial diseases.

Future prospects of phagetherapy

The phages have habitats like water and sediments therefore the isolation

of lytic phages is easiest in the aquaculture environments. Most of the bacterial diseases in shrimp and fish are caused by Vibrios and therefore the isolation of vibriophages has an important role in the disease management in aquaculture sector. In view of the latest research reports and fresh frame of bacteriophage therapy, it is promising that phagetherapy would be in front to treat aquatic animal diseases without harming the environments. In addition, the phages are plenty against vibrios and other genus which can cause frequent deceases in aquatic animals.

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AQUACULTURE SCENE

Inaugural Harvest Function of Seabass Cage Farming Held at Alvekodi, Kumta (Karnataka)

MPEDA, SRC (Aqua), Karwar conducted the inaugural harvest of Seabass in cages at M/s Skyline Aqua farm, Alvekodi, Kumta on 23rd June, 2010. The programme was inaugurated by Honourable MLA Shri. Dinakar Shetty, Kumta in the presence of State/Central Govt. officials, farmers, other entrepreneurs and media people.

After the inaugural Programme, a meeting was convened at Kumta which was presided over by Mr. Ibrahim Upparkar, a progressive farmer. Dr. G. Gopakumar, Assistant Director (Aqua), MPEDA, Karwar welcomed the dignitaries and briefed about the scope of finfish farming and requested farmers to take up the same. He also emphasized the need of diversification in aquaculture and the potential in Karnataka and Goa.

Honourable MLA Shri Dinakar Shetty in his address advised farmers to take up finfish farming particularly Seabass as it is a popular fish having high market acceptability in both Karnataka and Goa. He appreciated Mr. Vasudev Byndoor, Managing Director, M/s. Skyline Aqua farm, to venture into this pioneering activity in Karnataka State.

Dr. Philippose, Scientist-In-charge of CMFRI, Karwar in his felicitation address narrated his experience in open sea cage farming of Seabass and highlighted its profitability. He also appreciated the efforts taken by MPEDA to popularize cage farming of Seabass in shrimp ponds.

Shri. Hemanth Raj, Deputy Director of Fisheries, Government of Karnataka in his felicitation address highlighted importance of simplifying the technology of Seabass cage farming as laymen are mostly involved in this



Shri. Dinakar Shetty, Hon'ble MLA inaugurating the harvest. Standing L to R Shri. Vasudev Byndoor, Dr. Gopakumar, AD (Aqua)

activity. He also stressed to make the farmers aware of the economics of Seabass Culture and its profitability.

Shri. Vasudev Byndoor, presented the details of work carried out in the farm as well as nursery rearing in hatchery tank. He explained each and every step he has adopted for the farming of Seabass in cage. He advised farmers to take up Seabass farming in cages.

He informed that 4600 Nos. of Seabass Fries having length of 3.3 to 3.5 cm and weight of 3 to 3.5 gms were procured from RGCA and transported to Kumta on 18-09-2009. The fries were reared in his hatchery

for a period of 78 days. Later 3864 numbers of Seabass fries having length range of 8.9 to 14 cm weighing around 24.7 to 55.6 gm transferred on 05-12-2009 to seven numbers of cages erected in the demonstration pond having an area of 0.84 ha. WSA. The percentage survival in the nursery rearing works out to 84%. The fishes were further reared in the cages erected in the pond. The fishes were graded every fortnightly and same size fishes were segregated and reared in separate cages (2 x 2 x 1.5 mt) to avoid cannibalism. The fishes were fed twice daily with formulated slow sinking feed.

Farmers' Meet on "Abuse of Antibiotics in Aquaculture" conducted at Navsari, Gujarat

MPEDA, RC (AQ), Valsad in association with State Fisheries Department, Navsari organised a Farmers' Meet on "Abuse of Antibiotics in Aquaculture" on 9th June, 2010 at Sardar Smruti Kendra Hall, Navsari Agricultural University, for the benefit of the shrimp farmers of Navsari and Valsad districts of Gujarat. The meet was organised to make awareness in farmers on the impact of abuse of antibiotics in aquaculture, to discuss about notification issued by Ministry of Commerce and registration of farms with Coastal Aquaculture Authority (CAA).

Welcoming the gathering, Shri N.F. Patel, Asst. Director of Fisheries, State Fisheries Department, Navsari, outlined the promotional activities of the Government for the development of the aquaculture industry.

Shri D.K.Patel, Assistant Director (Retd), Navsari, inaugurated the meet. In his Inaugural address he outlined the role of Gujarat State Fisheries Department in the development of aquaculture. He said Gujarat has

abundant sources of water for promoting fresh water aqua farming and advised the farmers to utilize it. He said that the aquaculture industry generate employment to the rural youth and thereby generate sustainable income for the people.

Shri Saifuddin Anis, Deputy Director (Aqua), MPEDA, RC (Aqua), Valsad presided over the function. In his presidential address, he emphasized the need for hygienic food products as demanded by the importing countries. He explained the latest policies of European Union (EU) and notifications issued by Ministry of Commerce and Industry, Government of India. Further he discussed on consumers demand for antibiotics free food products. It was pointed out that fisheries products of our country may contain antibiotic substances and advised to follow farm level traceability to overcome the problem. Test should be done at farm level and pond level. He also informed that traceability is required for all sections of aqua industry such as hatchery - farm - feed mill -

processing plant and also aqua medicine. Farmers are requested to maintain daily records of their farm activity for 100% traceability. He advised farmers to come forward for hatchery projects for aquaculture need of the state.

Shri B.P.Patel, Assistant Director of Fisheries (Retd), Umbergaon felicitated the function. Shri Sureshbhai Patel, a shrimp farmer from Samapor village, Navsari District, appreciated the efforts of MPEDA and State Fisheries Department to develop shrimp farming activity. Further he requested all farmers to make farmers associations, necessary to make friendly atmosphere between neighboring farmers so as to avoid problems and for economic shrimp farming.

Finally open discussion was held, where points of doubts were raised and discussed. The doubts had been clarified and answered satisfactorily by Shri Saifuddin Anis, Deputy Director (Aqua), MPEDA, RC (Aqua), Valsad followed by vote of thanks.



A view of the dignitaries on the dias



A view of the audience

Report on the visit of Chairman, MPEDA to West Bengal

A meeting was organized at the office of the Director of Fisheries, West Bengal at Salt Lake City on 9th June, 2010. As decided earlier separate meetings one after another was held with officials, farmers and exporters in the same venue. The first meeting was presided over by Sri R.P.S. Kahlon, IAS, Secretary of Fisheries, West Bengal and was attended by Chairman, Director and Secretary, MPEDA, Dr. Saxena, Director, EIC, Dr. Manimaran, Director, CAA, Chennai, Director of Fisheries, West Bengal and District Magistrates of North and South 24 Parganas and officials from MPEDA, EIC and Fisheries Department.



Meeting of Chairman, MPEDA with Shri Kironmoi Nanda, Minister in charge for Fisheries, W.Bengal.

Initially in the officers meeting, Sri Kahlon indicated even though West Bengal contributes 9-10% of the export, the concerns of traceability of the farms and checking of banned antibiotics are the main issues which require immediate attention in the state. He recalled that less than 20% of the farms registered with CAA or with West Bengal Fish Producers Licensing Order are undertaking a unique kind of culture in the State called Ghery culture. The Gheries are owned by large chunk of owners but operated by few lessees on 2 to 3 years contract and do farming with trade license issued by the local Panchayat. Hence the traceability of the project

is under question and should be solved amicably for pre harvest testing and export. Later Dr. Madhumita Mukherji, Director of Fisheries, West Bengal sought the support of MPEDA on culture, production and export of ornamental fishes, groupers and other varieties of fishes.



Chairman, MPEDA taking a meeting with exporters of West Bengal.

Following the above, Ms. Leena Nair, IAS Chairman, MPEDA recalled that as per MOC&I Order, the farms established in the coastal area having clear ownership of land only could register with CAA or State Authorities and products from such farms only can be exported after testing the produce.

Later a meeting with the 15 shrimp farmers from 3 coastal districts of West Bengal was held. It was indicated by them that land conversion in Midnapur district from agriculture to aquaculture was not accepted by the Fisheries Department for registration under CAA. It was clarified by CAA that no such NOC is required by CAA. Subsequently, a meeting was held with exporters and various issues related to pre-harvest testing were discussed.

Later at the lunch hosted by MPEDA, Mr. Kiranmoi Nanda, Minister in Charge for Fisheries, Govt of West Bengal had discussions with officials. Altogether 35 exporters, 15 farmers and 22 officials attended the meeting.



Chairman, MPEDA with Mr. Kahlon, Secretary of Fisheries and Dr. Saxena, Director, EIC.

On 10/6/2010 Chairman, MPEDA accompanied by the Director, EIC visited the Fish auction centre at Haroa and noted the sales of shrimp and scampi. Later the officials visited the Ghery of Mr. Mathan Molla at Khasbalanda Panchayat near Haroa where operation of Ghery as indicated earlier was seen. Also the officials were shown with a copy of the trade certificate and



Chairman, MPEDA with Mr. Mathan Molla, a fish farmer.

Amalnama. At Kasbhalanka, the mission visited Supermeenakati Centre a shrimp seed nursery. The nursery owner had shown the seeds purchased from hatcheries from Tamil Nadu and Orissa. Later Chairman, MPEDA and Director, EIC visited the ELISA lab at Kharibari and noted the pre-harvest tests carried out by the ELISA lab.

Scientific Support for Pond Construction Helps Freshwater Fish Production

Mr. Kumar V. Naidu, of Holebyranahalli village in Bhadravathi Taluk, Karnataka owns 10 acres, adjacent to the Bhadra river canal. Mainly engaged in traditional paddy cultivation, the farmer today is well known in the region as a leading fresh water fish grower. A training programme organized by the fisheries department of Govt. of Karnataka some years back on freshwater prawn farming motivated the farmer to construct two earthen ponds (each one acre) in the field to start rearing fishes.

Scientists provided the technical support in the pond construction and benefit schemes were offered by the Department of Fisheries. The one acre earthen pond remained dry for a week and later 100 kg of agriculture lime sprinkled all over the pond bottom, and left undisturbed for two days and later filled with water.

Cowdung Slurry

About one tonne of cow dung slurry broadcast all over the pond water to facilitate algal growth, and fingerlings released into the pond after a week. Initially, for five days, the fingerlings' food consisted of two gram of groundnut cake powder, and later a mixture of rice bran and groundnut cake powder fed twice daily. Addition of manure once in 15-20 days helped in good algal growth.

Regular Monitoring

The technical team regularly monitored the water quality, growth and health of stocked fish seed once in 10 days and the farmer advised accordingly for the input management by the project team. "During the demonstration our team taught the farmer all aspects related to improved fish seed harvesting and handling such as seed grading based on size and seed

packing using oxygen," explains Dr. Seenappa.

The farmer says:

"I used about 50,000 of fingerlings of catla, rohu and grass carp varieties for my own stocking in a natural tank and the rest sold (catla, rohu at Rs.1.0 per fingerling and grass carp at Rs.1.50) to other farmers and spent Rs.1,10,000/- towards buying fish seeds, manure, fertilizer, feed and labour and earned a net profit of Rs.58,550 in three months." Influenced by the success of Mr. Kumar, other farmers in the area are also evincing keen interest in this fish growing project.

Impact

"The impact of the demonstration led to establishment of two new fish seed production units in the region," explains Dr. K. Manjappa, Proessor, Zonal Agricultural Research Station.

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Stress On Protecting Gulf Of Mannar Wealth

RAMANATHAPURAM: The International Biological Diversity Day and International Year of Biodiversity was celebrated by Gulf of Mannar Biosphere Reserve Trust (GOMBRT) here on Saturday the 22nd May, 2010. To mark the occasion, the Trust introduced glass-bottomed boat service near Pamban bridge which was inaugurated by Shri T.N. Hariharan, Collector, Ramnad Dist.

Chief Conservator of Forests and Director, GOMBRT, Ms. Aruna Basu Sarcar, in her inaugural address, spoke on the importance of the biodiversity wealth of Gulf of Mannar and various welfare activities provided by the Trust to the fisherfolk. She also addressed about the objective of introducing glass-bottomed boat service in Ramanathapuram district as it would

create knowledge and an awareness of marine life conservation.

Mr. Hariharan pointed out the uniqueness of Gulf of Mannar with regard to its diversity of marine organisms. The community had to play a major role in conservation of the biological resources as well as to conserve the endangered species such as seahorse, coral, sea cow, sea turtle, sea cucumber, he stressed.

The need to conserve marine biodiversity, to prevent sea pollution, among others, was the highlight of the programme. Wildlife warden M. Sundarakumar welcomed the gathering. The Collector distributed biodiversity award sponsored by the Trust Director to six persons for their outstanding contribution related to marine biodiversity conservation.

Aquaculture meet from January 17

KOCHI: The Asia-Pacific chapter of World Aquaculture Society is organising the 2011 Asia-Pacific conference and exposition, the Asian-Pacific Aquaculture 2011, in the city.

The mega event, being jointly hosted by the College of Fisheries, Kerala Agricultural University, Panangad and the State Fisheries Department, would be held from January 17 to 21 at the Le Meridian Convention Centre where more than 2,000 delegates, including experts from various countries abroad, are expected to participate.

Along with the Aquaculture meet, a conference on freshwater prawns, 'Giant Prawn 2011', would also be held. Addressing a press meet in this regard, K. R. Vishwambharan, Vice-Chancellor, KAU, said the confluence of people from different areas in the

fishing sector is expected to benefit the fishermen. The global fish production was about 145 million tonnes, according to the statistics given by Food and Agriculture Organisation. The State contributes about 6.5 lakh tonnes and most of this comes from the sea. Only about 12 per cent, about 80,000 tonnes, comes from the inland sector. At the press meet, he released the logo for the Asia-Pacific Aquaculture 2011. Dr. Meena Kumari, director, Central Institute of Fisheries Technology, launched the website www.apa2011.org for the conference. Mohan Kumaran Nair, Dean of the College of Fisheries, said that the country would soon have a water leasing policy to promote aquaculture. There would be arrangements for about a thousand fishermen to register at the conference free of cost, he said.

Indian Fishermen Learn Vietnam's Experience in Aquaculture

“Vietnam trains Indian fishermen” is the title of an article on “The Hindu” newspaper on June 9, highlighting the effectiveness and benefit of learning Vietnam's experiences in aquaculture and protection of maritime resources.

The paper cited a fisherman from Rameswaram, E. Altrin, who is one of eight fishermen receiving training in advanced fishing methods in Vietnam, as saying that knowledge from the course would help Indian fishermen increase their income significantly.

In the past, Altrin could get only 150 rupee (about US\$3) per kg for juvenile lobsters, each weighing 50gm in the past. Now, after raising these juveniles in floating cages in the sea to around 150 to 200 gm, he can earn 1,000 rupee per kg, according to the paper.

India opted for the training programme in Vietnam, which proved beneficial because it is an Asian country, said Benjamin Cherian, Chairman of the Relief Committee and former Governor of District 3230.

Cherian, who visited Vietnam during the training period, said that if Vietnam, which had one third of India's coastal belt, had emerged as a major leader in the world fishing industry, India could replicate the success.

Keen on providing training in advanced fishing to more fishermen, the Rotary International District 3230 has sent a proposal to the Union Ministry of Agriculture for 10 fishermen from each 11 coastal States to be sent to Vietnam.

Oceans' Fish Stocks Could Vanish By 2050

More than 20 million people employed in the fishing industry may need to be retrained for other work over the next 40 years if the final collapse of fish stocks in the world's oceans is to be avoided, the U.N. warned.

The U.N.'s environment branch, UNEP, gave a preview of its green economy report that will be published in October. It said if the world remained on its path of overfishing, by 2050 fish stocks could become uneconomic to exploit, or extinct.

Pavan Sukhdev, head of the initiative, said: "Already 30 per cent of the ocean fisheries have collapsed and are producing less than 10 per cent of their original ability." At the heart of the analysis is the \$27 billion in subsidies it estimates is being injected into fishing every year, mainly by developing countries. The U.N. says the subsidies are huge in terms of the scale of the industry, amounting to almost a third of the \$85-billion total value of fish caught. Among those subsidies, the U.N. defines \$8 billion as "good", in that they encourage sustainable fishing of healthy stocks. Most of the subsidies are "bad", meaning they lead to overcapacity and exploitation, and about \$3 billion of

the subsidies are "ugly", leading to the depletion of fish populations.

Among the most egregious practices targeted by the report are inducements to boost the size of trawler fleets that are among the main culprits of overfishing, and subsidies on fuel for fleets. "We're paying ourselves to destroy the very resource on which the fishing industry is dependant," said UNEP director Achim Steiner. At stake is not just the biodiversity of the oceans, but a substantial chunk of the global economy and the livelihoods that depend on it.

The U.N. estimates there are 35 million people directly employed in fishing, which translates to about 120 million including their households, and 500 million – or about eight per cent of global population – taking into account indirect businesses such as packaging and freezing. The report is being prepared prior to the Rio+20 summit in Brazil in 2012. UNEP refuses to name the worst offenders in overfishing, though it says its final report will contain figures that will enable readers to "figure out where the problem is".

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FICCI Study Finds Food Industry Unaware of Safety Act, Rules

A survey carried out by the Federation of Indian Chambers of Commerce and Industry (FICCI) indicates that a large portion of the domestic food industry is unaware of the existence of the Food Safety and Standards Act (FSSA) and its rules. The survey was carried out among 700 respondents and results showed that

30 per cent of the respondents did not know about the FSSA. In order to correct this, the chamber has called for conducting more capacity building programmes and in-department training programmes to enable smoother transition from the Prevention of Food Adulteration Act (PFA) to the FSSA.

Harmonization needed

More than half of the respondents said that there should be harmonization of domestic food regulations with internationally accepted standards. This, according to FICCI, would meet consumer aspiration of safe and healthy food at par with standards. The respondents were of the view that harmonization at horizontal level including labelling, food additives and food category system are enabling and straight forward.

"However, sectoral standards may need review and adjustment to Indian conditions wherever necessary," stated FICCI. The respondents for the survey included small, medium and large scale industries, both domestic and multinational companies from various locations.

Unified food law

A majority of the survey respondents (86%) also said that FSSA has served the purpose of a unified food law. Some, however, said that the law duplicates mandatory licences under BIS, Agmark, Packaged Commodity Rules, GEAC and others. This survey reveals that top three issues faced by the industry are lack of testing facilities, less industry representation and lack of transparency. About 18 % of the respondents feel that lack of testing facilities is the most relevant issue faced by the industries under the PFA regime.

"There is an urgent need to upgrade the current infrastructure and to create more to meet the needs of the growing sector," stated the chamber, suggesting that quality assurance labs should be upgraded with all scientific instruments for the proper testing of raw and finished products.

Programme Training On Personal Hygiene In Seafood Processing at CIFT

Central Institute of Fisheries Technology, Cochin in association with the Department of Science and Technology (DST), New Delhi conducted a one-day training programme on 'Personal Hygiene in Seafood Processing' at Moothakunnam in Ernakulam Dist. on 21st May, 2010. The training programme was conducted as part of the CIFT's project on 'Location specific livelihood interventions in Fisheries Sector for the empowerment of fisherwomen of Kerala'. The project envisages empowerment of women through scientific interventions suited to selected locations in Kerala through value addition of edible oyster and other seafood products. Foodsafety is an upcoming issue in food processing as hygienic handling reduces chances for food borne infections. The training intended to promote food safety habits among the stakeholders.

The inaugural function of the

programme was presided over by Shri Varghese Maniyara, Vice-President, Vadakkekara Panchayat. Smt. C.R. Sathiavathi, Joint Director of Fisheries, Govt. of Kerala spoke on the occasion and distributed 'hygiene kits' comprising head gear, mouth cover and aprons for the participants from different self help groups. Earlier, Dr. Femeena Hassan, Sr. Scientist, CIFT and the Project Leader briefed about the project objectives.

In the technical sessions that followed the inaugural programme, a lecture on 'importance of personal hygiene in seafood processing' was delivered by Dr. Femeena Hassan. Dr. J. Charles Jeeva, Scientist, Senior Scale, CIFT delivered a talk on 'capacity building for fisherwomen self help groups'. More than 50 women members from different self help groups in Moothakunnam participated in the programme. Dr. V. Geethalakshmi Sr. Scientist, CIFT proposed vote of thanks.

Challenges Ahead For Fish Farmers, Say EU Researchers

TORGER Børresen and Joop Luten, president and vice-president of the EU-supported SEAFOODplus Research Platform, say aquaculture has a key role to play in delivering healthy food for consumers. Latest data from the Food and Agriculture Organisation shows capture fisheries and aquaculture supplied the world with about 110 million tonnes of food fish in 2006. Of this total, aquaculture accounted for 47 per cent and the figure is expected to grow. According to Børresen and Luten, this raises important sustainability issues as to

the availability of sufficient fish meal and fish oil supply for aquaculture feed. They say the introduction of feed from vegetable sources is an alternative, but if protein and lipid composition deviates from the marine sources, it will have a negative impact on both the health of the farmed fish as well as on the final quality and nutritional properties of the product for consumers. The researchers say: "This is a serious challenge for the future expansion of aquaculture and calls for research to develop new feed sources. The common recommendation for consumers to eat

seafood twice a week is based on the well-known fact that omega-3 fatty acids reduce the risk of coronary heart disease. However, research also shows that seafood may prevent other lifestyle diseases, improve cognitive development and mental health, and may also prevent the development of cancer and allergy. The importance of seafood in the diet is this more far reaching than just the well-known effects of omega-3." Large integrated FP6 European research projects such as SEAFOODplus have in the last five years contributed to new knowledge about the importance of seafood for consumers' health and the perception of fish as food, with a particular attention to aquaculture. But new insights have raised challenging research questions: What are the underlying molecular mechanisms of the observed health effects? What is the beneficial role of important nutrients other than omega-3, like proteins, peptides, amino acids, vitamin D and selenium, all of which are components in seafood? What role can aquaculture play in the production of fish with an ideal nutritional composition as food helping to combat lifestyle related diseases? How can we develop innovative products from farmed fish that will stimulate the consumption of seafood?" Børresen and Luten add: "A holistic approach towards answering the questions raised on designing optimal nutritional farmed fish products with a high eating quality, and its impact on human health, is a challenge and must be addressed. The total feed components comprising lipids, proteins, peptides, amino acids, minerals, vitamins and trace elements must be considered an in-depth studies are needed with respect to the metabolism of various fish nutrients and their effect on the bioactive lever of human health related components in the final product. To test the design of farmed fish with optimal nutritional

composition for its health effect, studies will be needed at *in vitro* and *in vivo* level involving both animal studies and intervention trials on humans." However, we would miss our final goal of improved consumption of seafood, helping to prevent diseases, if the products from farming with the ideal nutritional composition are not consumed. Therefore, an important additional task for the future is

consumer-oriented seafood product development." European research should generate new knowledge of innovatively designed farmed fish, improve the competitiveness of European industries, particularly SMEs, and secure the delivery of seafood to satisfy a steadily growing market for healthy food. It will contribute to the ongoing potential of the food industry to improve human

and some other policy recommendations that included the one asking the government to consider extending the facility of interest subvention of 2 per cent on pre and post shipment export credit for all the sectors till March 31, 2011.

On the question of duty refunds, the committee recommended that the Department of Commerce should impress upon the Ministry of Finance to consider exempting exporters totally from payment of service tax, instead of refunding them the same. At the same time, the parliamentary committee recommended that the government should put in place a mechanism to establish a faster 'single window clearance' system at all the airports, ports, land customs stations and inland container departments based on simple rules and procedures for promotion of exports.

"Top priority should be accorded to provide export infrastructure of international standards by having close co-ordination with various concerned agencies at both the Central and State levels", it said. The committee also asked the Commerce Ministry to expedite setting up of the Small Growers Directorate, whereby these small growers could get some kind of registration and the benefit under the Central scheme start flowing to them.

"The government should ensure timely implementation of the schemes for development support to coffee in the current financial year and give more incentives to the coffee growers for re-plantation. The crop insurance scheme should be made operational immediately and steps be taken for its popularization among the tea, coffee, rubber and spices growers and for their speedy enrolment under the scheme," the Committee said.

WTO to Set Up Panel to Review US Duty on Shrimp Imports

The Business Standard.

The World Trade Organization (WTO) has decided to establish a panel to review the anti-dumping duty imposed by the US on frozen shrimp imports from Vietnam. The decision was made after Vietnam's repeated requests for setting up a panel at a session of the WTO's Dispute Settlement Body (DSB) in Geneva.

The decision is relevant for India also as the Sunset review of the duty imposed against India is now pending with the US International Trade Commission (ITC). The results of the review are expected by March 2011, and if this is not in favour of India, it can also approach WTO.

In September 2008, WTO had scrapped the Customs bond imposed against the import of Indian shrimp to the US. In April last year, the US Customs and Border Protection had withdrawn the bond requirement completely.

The US DoC had imposed anti-

dumping duty on shrimp imports from India, China, Taiwan and Vietnam in 2005.

The Sunset review conducted by US DoC, parallel to ITC proceedings, had decided to continue with the duty and fixed the base rate at 10.17 per cent. This was against the expectation of the export industry here and now the industry captains are looking forward to ITC decision.

Anwar Hashim, president, Seafood Exporters Association of India (SEAI) said the industry had expected a drop in the duty effectively to de-minimis (below 0.50 per cent), but now they are hoping for a fair decision from the ITC.

Meanwhile, SEAI sources clarified that the purpose of Sunset review is to determine whether anti-dumping duty might be revoked. It does not determine the deposit or the assessable rates of the duty. The assessable rates are determined in an Administrative review only. So the 10.17 per cent duty is not applicable for exports to the US.

Exempt Exporters from Paying Service Tax – Parliamentary Panel

The Parliamentary Standing Committee on Commerce has recommended exempting exporters

totally from payment of service tax. The Committee, headed by Rajya Sabha MP Shanta Kumar, made this

Fish Workers Forum to Protest against Kochi Port

The Kerala Fisheries Co-ordination Committee is protesting against the Kochi Port authorities for not carrying out dredging in front of the fish landing centre at Vypeen and also for not providing adequate facilities for the fishing harbour there. As a first phase of the agitation, the Co-ordination Committee has decided to carry out a march to the Port Trust Chairman's Office on June 11.

Mr. Charles George, Convenor of the Co-ordination Committee, in a statement issued here said that the then Port Trust Chairman had given an assurance to provide adequate facilities in the fishing harbour set up in Vypeen, on the western side of the Vallarpadam island. Matsyafed had proposed a fishing harbour in 2003-04 for anchoring fishing boats and to carry out auction of fish.

The port authorities had opposed the project at that time as the land for the area was earmarked for the proposed container transshipment terminal at Vallarpadam. However, the authorities had agreed to provide alternative land on the western side of Vallarpadam near Kalakukku in Vypeen following protest from fish

workers. Though five years have passed, the port authorities have not taken any steps to fulfil the promise for the development of the facility. The co-ordination committee pointed out that the formation of silt in front of the fish landing centre developed by the State Government was causing enormous difficulties for the fishing community in anchoring fishing boats, as boats from various parts of the State anchor there especially during the monsoon season.

The Port authorities had turned down the request of dredging in the area made by the State Fisheries Minister at a meeting convened by him last week. Given the situation, the committee decided to strengthen the agitation. The Committee also demanded the State Government to take adequate steps in removing the silt from the Vembanad lake to pave way for smooth flow of water.

The Government should also take steps to address the concerns raised by the Fishing community on the proposed development activities around various backwater islands including Valanthakad.

UNIDO's 'Traceability System' Ensures Quality of Bangladeshi Seafood

The seafood industry in Bangladesh got a shot in the arm with the recent introduction of a traceability system, to ensure that quality standards and the Bangladesh national quality management system are accepted internationally.

Piloted by the Vienna-based United Nations Industrial Development Organisation (UNIDO) and implemented in cooperation with the Geneva-based International Trade Centre (ITC), the new traceability system ensures continuing access to

export markets for Bangladesh seafood and in particular to the European Union (EU). According to UNIDO, Bangladesh needed a proven traceability system, because Bangladesh and other similar shrimp exporting countries have been operating with a large number of very small suppliers and a complex and irregular system of intermediaries.

Traceability is a crucial element in quality assurance, and especially in food safety. It implies that, through detailed record keeping throughout the value chain, the origin of a faulty product or batch could easily be identified in order to block further supplies until fault is rectified.

Pilot scheme

In cooperation with Bangladesh Department of Fisheries, UNIDO designed and introduced a complete traceability system entailing, among others, pilot scheme followed by industry-wide implementation, registration of all 1,79,325 shrimp farms by area, collecting depots, ice plants and export processing plants licensed and regularly inspected. There is also training on traceability involving 9,804 farmers, 1,325 collection depot managers and staff and 409 export processing plant managers, 48 ice factory managers and 600 inspectors and extension officers.

The advent of traceability coupled with improvements in testing, inspection and hygienic practices would ensure continued access to major export markets for Bangladesh seafood industry. Neighbouring countries have also shown interest in learning and benefitting from the Bangladesh experience, as they find their marine product export consignments being rejected at the entry ports for want of safety standards, particularly in the EU.

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Asthma Patients Queue up to Take Fish Medicine?

Hundreds of asthma patients from different parts of India queued up here in Hyderabad to gulp down a live 'murrel' fish with a yellow herbal paste in its mouth in the hope it can cure them. The distribution of the famous 'fish medicine' began in the evening at the sprawling Exhibition Grounds in the heart of the city.

The members of Bathini Goud family, which has administered the medicine free of cost for over 160 years, started distributing the medicine after a traditional 'puja' at 5 p.m., the time set by their astrologers, which also heralds the onset of monsoon. Men, women and children stood in long queues hours before the Goud family members and volunteers started administering the 'wonder drug'.

The Hyderabad district administration made elaborate arrangements for the annual event. Over 300 policemen were deployed as part of the security measures. The fisheries department has made arrangements for the sale of 'murrel' fingerlings. Those who don't take fish are being provided medicine with jaggery. Like in the past, people from different regions gathered in the hope of finding some relief to their nagging

respiratory problems, despite the controversies surrounding its efficacy.

The Goud family claims that over 400,000 asthma patients turn up every year but the turnout has hardly exceeds 100,000, going by the arrangements made by fisheries department for sale of fingerlings. The Goud family, which named the medicine 'fish prasadam' recently to avoid legal problems, claims that it was still popular despite the 'false propaganda' by some groups. According to the family, the tests in laboratories conducted as per court orders revealed that the herbal paste is safe.

The herbal paste is put into the mouth of the live fingerling before slipping it into the mouth of the patient. It is believed that if taken for three successive years, the medicine cures asthma. The Goud family has distributed the 'fish prasadam' free of cost for 164 years. It claims that the secret formula for the herbal medicine was given to their ancestor in 1845 by a saint after taking an oath from him that it should be administered free of cost.

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Fishermen Warn of Agitation

The Kerala Swathanthra Matsya Thozhilali Federation has said the fishermen along the entire coast of the State are preparing for an agitation against the Marine Fisheries Regulation and Management Bill, the draft of which has been published by the Union government. In a statement here on Tuesday, the federation, which has a strong following along the State's coast, said the Bill's intention was to help the tourism industry and foreign trawlers

sweeping fish from the country's seas. It would serve only to damage the interests of traditional fishermen.

The federation said the fishermen had been urging the Union government to enforce the coastal zone regulations diligently, but with ample relaxations in the stipulations to enable them to pursue their means of livelihood without difficulties and build houses close to the coast. The request of the fishermen had fallen on deaf ears. It alleged that a move was

now on in New Delhi to torpedo the ban being enforced on trawling operations in the coastal seas during the monsoon period. The pattern being followed was to ban trawling from June 15 to July 31. Traditional fishermen would block any trawler going out to the sea during this period, the federation said.

The organisation also urged the State government and the Union government to initiate measures to supply traditional fishermen sufficient quantity of kerosene as fuel for their boats. The Union government was slashing from month to month the kerosene quota to Kerala. Big trawler vessels were, at the same time, being supplied diesel at subsidised rates. The federation further demanded the inclusion of all traditional fishermen in the below poverty line (BPL) category. Although they belonged to the most backward section of the population, nearly 60 per cent of them now came under the above poverty line (APL) category. The benefits of most of the welfare programmes for the poor, therefore, eluded a majority of fishermen.

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Malaysians Largest Consumers of Seafood in Southeast Asia

By Tim Leonard, 'The sundaily'

Malaysians are the biggest consumers of seafood in Southeast Asia with an average consumption of 1.4 billion kg every year, say WWF-Malaysia and Malaysian Nature Society. The organisations, in launching the 'Save Our Seafood' campaign in conjunction with World Oceans Day today, urged all Malaysians to practise a sustainable seafood consumption lifestyle. WWF-Malaysia president Datuk Dr Dionysius S.K. Sharma said local demand for seafood has resulted in the rapid decline of our fish supply due to overfishing. "Fisheries play an important role in Malaysia's culture and economy. The total fish production in 2007 was 1.65 million tonnes valued at RM5.8 billion," he said. "Despite the increase in the value of fish production over the years, the situation on the ground is worrying. "Our demand for seafood has resulted in the rapid decline of our fish supply due to overfishing," said Dionysius."

We are taking some of our fish stocks out of the ocean faster that they can be replenished. "If this scenario continues, we may eventually lose all of our fish along with other marine life." Dionysius claimed that findings of a group of fisheries scientists have predicted that globally, in another 40 years, we run the risk of not having any seafood to eat if we continue to consume indiscriminately. "We must be more responsible in our consumption of fish because we simply cannot afford to deplete our oceans of marine life, as it would jeopardise one of our key food sources as well as the fisheries industry sustains millions of livelihoods. Dionysius noted that a survey commissioned by WWF-Malaysia showed that more than 70% of Malaysians are willing to reduce seafood consumption if fish stocks are declining." However, only a quarter of Malaysian consumers are aware of the declining fish supply in our seas," he added.

MoEF Floats New Rules for Breeding, Selling Aquarium Fish

Soon, a goldfish in a bowl may be a thing of the past. Goldfish, and indeed all fish, must only be kept in rectangular tanks, not bowls, and as a starting point, aquarium animals should never be 'touched' or 'petted', frozen or flushed down a toilet. And no more artificially coloured fish — a rage in public places where aquariums are used for decoration purpose.

Putting in place draft rules for the lucrative fish and aquarium industry, the Ministry of Environment and

Forests has put in the public domain specifications for the trade. This is the first time India has attempted to consider the conditions under which fish are sold. While there are rules in place for the selling and breeding of cats and dogs, the same is not true for fish, which have largely been considered decorative.

According to the draft rules, all breeders and sellers of aquarium fish have to be registered with the Animal Welfare Board of India. The rules

specify that the animals should be kept in rectangular tanks five times the size of the fish, and not in bowls. Fish cannot be artificially coloured, or caught using drugs. Spurred by animals rights activist and MP Maneka Gandhi, the rules will be adopted after circulation and discussion.

The fish and aquarium trade earns big bucks all over South East Asia, with fish also sold for Feng Shui. But there's an illegal dimension to the trade: protected corals and turtles are also sold for aquariums with very little monitoring. There are two kinds of aquariums: freshwater and salt aquariums. The new draft rules specify that apart from corals, starfish and Indian turtles, eels too cannot be traded either. Certain species of angel fish, cuttlefish and butterfly fish have also been banned. While trade in any kind of Indian turtle is banned, turtles are being sold for aquariums. The Wildlife Crime Control Bureau had recently put out an alert on the sale of star tortoises.

A recent study shows that fish from the tropical waters, especially around coral reefs, are being emptied for the aquarium trade. "The numbers are shocking. What we consider an innocuous trade is very large. Fish which are caught for marine aquariums are essentially wild fish: these are the fish of the coral reefs and they are being taken out in an unchecked way. The trade needs to be regulated," says a senior official from the Wildlife Crime Control Bureau.

In Japan, neon-lit phosphorescent fish for aquariums had been created. But if the new rules are adopted, such experiments will be banned on Indian fish. The rules specify that the fish tank should not be kept in places with vibrations, loud sounds, or in a place that is always exposed to light or always exposed to the dark.

Fisheries Need A Separate Ministry: Kalam



Dr A P J Abdul Kalam, former President of India, visited Central Institute of Fisheries Technology, Cochin, on June 6, 2010, in connection with the World Environmental Day and International Year of Biodiversity celebrations. The United Nations has declared the year 2010 as the International Year of Biodiversity (IYB) in order to raise awareness of the consequences of the loss of biodiversity and the year is to be celebrated under the slogan “Biodiversity is Life, Biodiversity is Our Life”. In recent years, the CIFT has given much focus on development of conservation technologies to facilitate utilization of fishery resources on a long term sustainable basis, minimization of biodiversity loss and conservation of energy use in harvest and post harvest operations in fisheries.

Addressing a gathering of scientists, officials and students of R&D organizations at CIFT, Cochin, Dr. Kalam proposed the idea of

creation of a separate union ministry for fisheries in order to give impetus to fisheries development. Kalam stressed on the need for conservation of over-exploited capture fishery resources. He addressed the issues of property rights in the inland and coastal fisheries to facilitate technological solutions for seasonal problems of the fisher population. He said that CIFT has to spearhead the strategies to conserve biodiversity of the aquatic resources. He also suggested an action plan for increasing fish production in Andaman & Nicobar Islands and developing it as a fisheries hub.

There was a need for establishing coastal PURAs (Providing Urban Facilities in Rural Areas) with physical, electronic, knowledge and economic connectivity in order to ensure food, nutritional and livelihood security of the coastal populations. Dr Kalam also pointed out at the importance of producing clean bio-fuel from marine

algae. He said, “With the growing demand for food, upward trend in seafood exports and with growing constraints on land availability for agriculture, the fisheries sector will be playing a prominent role as a revenue earner, food supplier and job provider. In this connection, the role of fisheries technology institutions like CIFT, would be extremely important for taking the nation’s fisheries sector to the next level of development.”

He proposed five missions for economic prosperity of the fishing community and fishermen villagers, which the R&D organisations needed to pioneer with the government and other organisations.

- Establishment of PURA in coastal areas; about 200 PURAs are to be established along the coastline of India.
- Capacity building of fishermen through training in deep sea fishing, processing, value addition, packaging and marketing.
- Conducting unique courses by CIFT for the benefit of fishermen in preservation of fresh fish, processing technologies, value addition and marketing, with venture capital support
- Sending fishermen abroad in batches for training to countries where fish production and processing are highly developed.
- Facilitation of higher studies for children of fishermen in engineering, medicine, biotechnology and management through an appropriate mechanism by the government.

Dr Kalam also found time to answer a few questions from research students, ranging from mitigation of impacts of global warming to acceptability of Genetically Modified crops. An exhibition of the Institute activities was arranged and Dr. Kalam spent some time going through the various programmes and achievements of the Institute.

Matsyafed Launches Food Supplement Tablets

Kerala State Co-operative Federation for Fisheries Development (Matsyafed) in technical collaboration with Central Institute of Fisheries Technology (CIFT) has introduced Chitosan capsules in the market, claimed to be a natural food supplement against obesity, overweight and high blood cholesterol level.

Chitosan is used as an OTC food supplement all over the world for more than 40 years. Matsyafed has introduced the product as part of venturing into commercial activities and this is a first step by a Government cooperative society in Kerala to the healthcare sector, Mr V.V.Saseendran, Chairman, Matsyafed, said at a press meet.

Quality control

The product is extracted hygienically from the exoskeleton of fresh marine prawns, crab and lobsters in technical collaboration with CIFT, which maintains the quality control of the product, he added.

Matsyafed has established a high-tech plant at Neendakara in Kollam district with a capacity to produce 1.5 lakh capsules a day at an investment

of Rs 1.10 crore. The company is also in the process of setting up a Glucosamine plant with international standards at Punnapra in Alappuzha district at a cost of Rs 4 crore for producing drugs for arthritis. It is awaiting necessary clearance from the departments concerned in this regard, Mr P.Kesavan Nair, Managing Director, said.

Clinical studies

Speaking on the occasion, Dr D.M.Vasudevan, Department of Biochemistry, Amrita Institute of Medical Research, Kochi, said that extensive clinical studies undertaken on various aspects of Chitosan found that the product appeared to be a non-toxic, well tolerated effective natural product in helping people achieve weight reduction, normal BP and blood cholesterol reduction. Matsyafed, the apex body of 666 primary fishermen cooperative societies, has registered a net profit of Rs 15.46 crore for the first time in its history on a turnover of Rs 314.21 crore in 2009-10. This year, the company has set a turnover target of Rs 400 crore, Mr Nair added.

Forecast: No Fish By 2050. Time For Aquaculture

“Aquaculture is the way of the future,” Marshall Gilles, head of the Canadian government’s agriculture and fishery division, said. As far as Gilles is concerned, “we’ll be farming our fish at greater and greater rates in coming decades to meet demand.” Gilles isn’t the only one on board with that theory. According to Reuters,

“officials and researchers say fish farming, known as aquaculture, is set to become the world’s main source of seafood over the next 20 years.”

The U.N. has officially declared that if fish consumption continues at its current rate, there will be no fish in our seas by 2050. The U.N. Food and Agriculture Organization (FAO)

estimates that more than 70 percent of the world’s fish species are already either fully exploited or depleted. With such bleak repercussions in sight—over a billion people worldwide are dependent on fish for protein—aquaculture is looking to be a more promising response to food insecurity. And it’s already underway.

Modern aquaculture—fish and aquatic food farming—is currently the world’s fastest-growing food production sector, with an average worldwide growth rate of 6-8% per year. Global aquaculture has increased by a third since 2000, and currently provides around half of the world’s seafood for human consumption.

But fish farming is not an easy solution. Countries who want to compete in the industry have a lot of factors to consider. Environmentalists who strive to protect coastal waters and species force fish farms to operate farther from the coast; that ups the need for technology, and simultaneously poses greater environmental risks. Then there’s equipment, feed and transportation. Opponents of aquaculture worry that the waste produced by farmed fish will have a negative impact on the nutrients of the sea bed. They also caution that farmed fish that escape their containers can interbreed with wild fish and produce unfortunate results.

But aquaculture does get a stamp of approval from WWF, the environmental organization dedicated to wildlife preservation and the protection of endangered animals. In a statement to Reuters, WWF said: “The rapid expansion of the aquaculture industry has not come without impacts. However, when done responsibly, aquaculture’s impact on wild fish populations, marine habitats and water quality is minimal.”

A Win-win Situation Thanks To Ornamental Fish Breeding

M.J. Prabu

Venkatanahalli a peri-urban village, housing 125 residents, close to Bangalore International Airport, is a hub of activity today. The women in the village are actively involved in agricultural activities. Prominent among them is Mrs. Narayanamma, an established ornamental fish breeder and role model for many women in the region.

Income generation

"Thanks to the guidelines given to us by the Department of Inland Fisheries Division, University of Agricultural sciences, Bangalore, I earn Rs, 3,000 to Rs. 4,000 a year by growing ornamental fishes in my backyard," she says. The University of Agricultural Sciences (UAS) and IOWA State University of Science & Technology, U.S., funded a training programme on ornamental fish farming modules for rural farm women.

Initial help

"Initially we provided four circular cement rings each of 500-600 litres capacity, live food, production tank of 150 litres capacity, covering net, plastic tubs, hand nets and plankton nets to the women and supplied parent stock of different varieties of fishes such as mollies, guppies, platys and sword tails to enable them to develop their own breeding programs," says Dr. D. Seenappa, Chief Scientific Officer, Inland Fisheries Division, Main Research Station of the University. The women learnt to make live feeds such as daphnia, mosquito larvae, earth worms, and fruit flies and dry feeds – pellets, flakes and egg-custard – using locally available inputs.

"Initially, feed for the fingerlings consisted of a mixture of 15 grams of cow dung manure and 5 grams of groundnut given in three installments (1-2 gms daily) during the first week and doubled during every subsequent week," says Dr. Seenappa. Throughout the rearing period of 40-60 days the

women continued to apply the manure on alternate days and partial water exchange (4-5 times) after the first month depending on the water's colour.

"All the women harvested about 120-130 marketable sized fish and sold them to buyers at a farm gate price of Rs.3- Rs.5 per fish. "They harvested 4-5 crops earning about Rs. 3,000 - Rs. 4, 000 a year. The department staff also helped them in marketing by getting an MOU signed between the growers and the buyers," explains Dr. Seenappa.

Generating interest

Other members in the village got motivated and this resulted in expansion of the activity to over 30 families in the village today in a phased manner investing their own money. The success of Mrs. Narayanamma and her group stimulated several SHGs' from neighbouring villages in the past couple of years to try their hands in rural ornamental fish rearing, "as it is emerging as a popular income generating activity among women," adds Dr. Seenappa.

Development schemes

Based on the success rate at rural levels several development schemes/ initiatives are also being introduced by the Karnataka government and other institutions in support of popularizing the activity at community levels. The Department of Fisheries supports the SHGs of Venkatanahalli village and other neighboring villages by donating an amount of Rs.10,000- Rs.20,000 per group as one time grant (revolving fund) under the Mahila Swayalambana Yojana.

Marketing link

"Adoption of technologies and linking to local market is crucial to make the venture sustainable.

For more information readers can contact Dr. D. Seenappa, Chief Scientific Officer, Inland Fisheries Division, Main Research Station,

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Blue Fin Tuna is One Step Closer to Extinction: Greenpeace

Bluefin tuna is one step closer to extinction as the EU prepares to close this year's Mediterranean bluefin season - which should not have been opened in the first place, said Greenpeace. The closure will become effective at the latest as of midnight on Wednesday, the European Commission said in a statement.

The Commission took the decision to intervene and close the purse seine fishery after France had failed to recall its fleet. European 'purse seine' fishermen, one of the most unsustainable fisheries that takes the largest chunk of catches (about 70 percent), have almost reached their quota for 2010, one week before the official end of the season - a step that has been taken before.

But the tuna massacre is set to continue as European fishermen flying non-European flags of convenience continue to fish. Non-EU boats are estimated to be responsible for about 40 percent of the total bluefin tuna catch in the Mediterranean.

Greenpeace International oceans campaigner Oliver Knowles, onboard the Rainbow Warrior on an expedition to save tuna in the Mediterranean, said: "Bluefin tuna is on the brink of extinction and fishing should never have taken place this year - yet another example of how politics have failed our oceans and the Mediterranean. Scientists have shown that the only appropriate fishing quota for bluefin tuna is zero. These ships should not have been allowed to fish at all this season." (ANI)

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Yellow fin tuna

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