FOCUS AREA

Shri Oommen Chandy, Hon'ble Chief Minister of Kerala, inaugurates Stock Enhancement of the Marine Finfish - Cobia (*Rachycentron canadum*) developed by Rajiv Gandhi Centre for Aquaculture

Exploitation of Fishery resources over the years has gradually progressed from under exploitation to moderate exploitation and finally to overexploitation, not just in India but across the world. Natural marine resources are rapidly declining with the increase in fishing efforts and improvement in fishing technology. Presently, we have reached a stage where rational exploitation is to be urgently implemented in addition to taking immediate steps in the recovery of depleted/ declining stocks through stock enhancement and sea farming activities.

Stock enhancement and sea ranching have been discussed over the last few decades ever since it was observed that the natural fish stocks in the ocean have begun to decline and the organized exploitation of these resources are intensifying. Stock enhancement and sea ranching should be seen as a part of total fisheries management with a combination of ecological, social and economic impacts. However, stock enhancement activities have to be designed and implemented to meet their objectives in a responsible way.

RGCA has a mandate for undertaking activities such as ranching of healthy, hatchery produced aquatic species that are being continuously overexploited, for natural stock enhancement. RGCA has been undertaking such natural stock enhancement activities from time to time and has already ranched brackish water species such as the Asian Seabass - *Lates calcarifer* and the Mud Crab *Scylla serrata* at Pazhayaar estuary in Tamil Nadu. The present MPEDA-RGCA programme for sea ranching of the marine finfish, Cobia is probably the first of its kind in India at this scale. This programme, like the earlier programmes, is committed to be implemented in a dedicated and responsible way.

The Marine Finfish Project of RGCA was established at Pozhiyur in Thiruvananthapuram, Kerala with Cobia - *Rachycentron canadum* as the candidate species with the objective of opening up avenues for diversification of export oriented aquaculture through sustainable aquaculture production of marine finfish, to popularize open sea farming in India and to enable the country to utilize the untapped resources to boost up aquaculture production, seafood exports and increase export earnings.

Cobia is also known as Lemon fish or Ling. It is distributed in tropical warm waters worldwide and usually reaches to a size of 1.3 m. But individuals that have reached 2 m. length and 68 kg have also been recorded. Cobia is an exceedingly fast growing fish, known to grow to approximately 5 Kgs within 16 months. The feed conversion ratios are also very promising at all the open sea cage farming activities carried out so far. With a desirable appearance, texture, and flavour; the flesh of the Cobia is preferred by most consumers all over the world. In addition, its flesh also has high levels of Omega-3 fatty acids (one of the highest levels of heart-healthy Omega-3 fatty acids of any seafood) making it more appealing to the consumers. All these attributes make Cobia an ideal species for open ocean aquaculture production.

This Marine Finfish Project of RGCA has been successful in breeding Cobia and has achieved mass production of Cobia fingerlings. Using the fingerlings produced at the facility, RGCA is now pursuing two activities that would help the nation to conserve the ocean resources to meet the food fish requirements in the coming years and decades. The first activity is to exploit the vast expanse of the oceans for growing fish in a scientific way through "Sea Farming". This is an extremely effective technology that can be adopted by fisherfolk where they are assured specific yields and guaranteed returns. Production through farming can also help to reduce the dependence on fishing and prevent overexploitation of fishery resources thereby conserving natural stocks.

The second activity is the replenishment or enhancement of ocean resources through scientifically planned "Sea Ranching" activities which would assist in recovery of depleted stocks as well as in maintaining the stocks that are rapidly getting depleted.

On 22nd July 2011, RGCA took up a Marine Finfish Natural Stock Enhancement Programme in which 1000 juveniles of Cobia produced at the RGCA hatchery, Pozhiyur were

sea ranched off the Vizhinjam coast near Thiruvananthapuram. The programme was launched by the Hon'ble Chief Minister of Kerala, Shri Oommen Chandy on board vessel of Kerala Marine Enforcement Department by ranching hatchery produced juveniles of Cobia into the sea at Vizhinjam in the presence of Dr. Shashi Tharoor, Hon'ble Member of Parliament, Thiruvananthapuram and Ms. Leena Nair, Chairman, MPEDA. To mark the first ever such large scale ranching activity being organized in the country, a function was organized by RGCA at Vizhinjam.

Earlier, at the public function organized at the Vizhinjam harbour, Ms. Leena Nair IAS, Chairman MPEDA gave the welcome address

Shri Oommen Chandy, Hon'ble Chief Minister being received by Ms. Leena Nair IAS, Chairman, MPEDA

Chairman, MPEDA delivering welcome address

Shri J. Ramesh, Secretary, MPEDA welcomes Shri Oommen Chandy, Hon'ble Chief Minister of Kerala

Shri P. Mohanasundaram, Director, MPEDA welcomes Dr. Shashi Tharoor, MP

(L-R): Smt. Jameela Prakasam, MLA, Shri Oommen Chandy, Hon'ble Chief Minister, Dr. Shashi Tharoor, MP and Chairman, MPEDA

Hon'ble Chief Minister inaugurates the public function by lighting the traditional lamp

Dr. Shashi Tharoor, MP lights the lamp during the inaugural function

Chairman, MPEDA lights the lamp during the inaugural function

Shri Oommen Chandy, Hon'ble CM of Kerala gives away the inaugural address

Dr. Shashi Tharoor, MP delivers the presidential address

Ranched Cobia juveniles

and Shri. Y.C. Thampi Sam Raj, Project Director, RGCA presented the technical report. Other prominent guests at the function included Smt. Jameela Prakasam, Member of Legislative Assembly, Kovalam, Shri. V.N. Jithendran IAS, Director of Fisheries and Shri P.M. Francis IAS, District Collector, Thiruvananthapuram.

Chairman MPEDA, in her welcome address announced that MPEDA - RGCA propose to undertake such stock enhancement programmes on a regular basis in the future so that these would in the coming years, contribute substantially to the fishery

Shri Y.C. Thampi Sam Raj, Project Director, RGCA presents Technical Report

Dr. Shashi Tharoor, MP handing over packed Cobia juvenile to a fisherman for ranching

The dignitaries on board vessel for ranching Cobia juveniles off Vizhinjam

production of the area.

The Chairman also informed that the projects of RGCA, had already and was further planning to invest heavily on genetic improvement of farmed marine species that was urgently needed to support further development of sea ranching and sea farming. The next ranching programme would involve tagging of fish before its release into the ocean to carry out several studies with the data obtained from recaught fish. There is also immense scope for sea farming in the country and RGCA also plans to take the sea farming technology to the fishing sector through its Technology Transfer and Training Centre at Sirkali in Tamil Nadu where hands-on training is being provided on the technologies developed under RGCA projects to farmers, fisherfolk, technocrats and students/govt. officials, so that the fishing and aquaculture sector would be improved.

The Chairman added that the estimated fishery production of Cobia around Vizhinjam which is presently around 500 Tons (approx) could be increased to around 2000 Tons in the next 3-4 years time by undertaking such sea ranching programmes. An additional 3000 tons could also be produced through sea farming in the area. Thus a total production of around 5000 tons of

Hon'ble Chief Minister releases the Cobia juveniles while Dr.Shashi Tharoor, MP and Chairman, MPEDA look on

Dr. Shashi Tharoor, MP releases the Cobia juveniles

the Cobia, with a value of around Rs. 2000 crores could be achieved and exported from the area in the coming few years.

In his inaugural address, the Chief Minister Shri. Oommen Chandy, emphasized the importance of undertaking such activities that would greatly benefit in increasing the export of Seafood from the country, as well as to the fisherfolk, who would be contributing to this increased fish production. The CM also assured all support from the Government of Kerala and from the Govt. of India to such programmes.

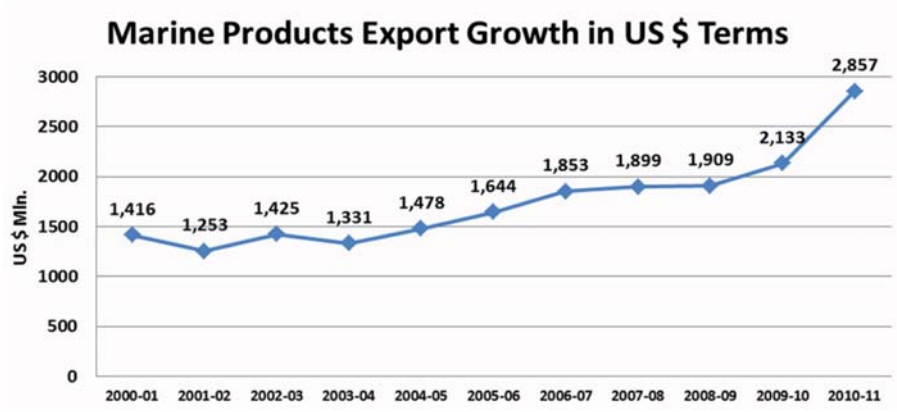
Dr. Shashi Tharoor, in his presidential address observed that Cobia had great demand in the international markets and India should cash in on the demand by undertaking sea ranching and sea farming activities. Dr. Tharoor also stressed that with meticulous planning and systematic approach, we could beat China and become world leaders in aquaculture production. This could be achieved only by creating world class infrastructure with a long term vision, he added.

Adult Cobia

Shri P. Anilkumar, Project Manager, RGCA proposed the vote of thanks.

Marine Products Export Crossed 2.8 Billion Mark in 2010-11

The marine products export figures for the year 2010-11 was officially released by Ms. Leena Nair IAS, Chairman, MPEDA in a Press Conference on 8th August 2011 at Kochi. Shri Anwar Hashim, President, SEAI and Shri N Ramesh, Director (M), MPEDA also attended the Press Conference. It was participated by the representatives from various Print, Audio and Visual Media. The salient features of marine products export figures for 2011 are detailed below.



Press conference by Ms. Leena Nair IAS, Chairman, MPEDA

During 2010-11, for the first time in the history of marine products export, the export earnings have crossed 2.8 billion US dollars. This is also first time that the export has crossed all previous records in quantity, rupee value and US $ terms. Exports aggregated to 8,13,091 tonnes valued at Rs. 12,901.47 crore and US Dollar 2,856.92 million. Compared to the previous year, seafood exports recorded a growth of 19.85% in quantity, 28.39% in rupee and 33.95% growth in US$ earnings respectively.

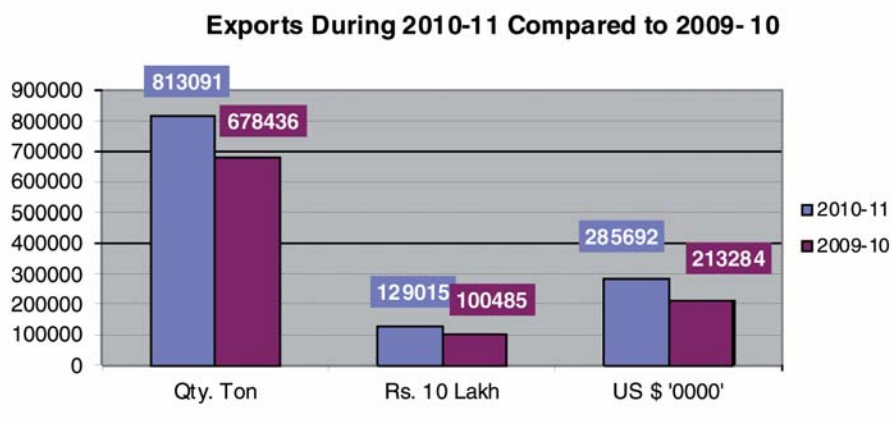
The figures must be viewed in the light of the scenario of continuing recession in the international markets, debt crisis in EU economies, continuing antidumping duty in US and the sluggish growth in US economy and political instability in the Arab world. The increased production of *L. vannamei* shrimp, increased productivity of Black tiger shrimp and better price realization of major items like Cuttlefish, Shrimp and Squid helped India to gain such a higher export turnover.

Major items of export

Frozen Shrimp continued to be the major export value item accounting for 44.17% of the total US $ earnings. Shrimp exports during the period increased by 16.02%, 36.72% and 42.90% in quantity, rupee value and US$ value respectively. Fish, has retained its position as the principal export item in quantity terms and the second largest export item in value terms, accounting for a share of about 38.42% in quantity and 20.42% in US$ earnings.

Exports during 2010-11 compared to 2009-10

Export details	2010-11	2009-10	Growth %
Quantity Tonnes	813091	678436	19.85
Value Rs.crore	12901.47	10,048.53	28.39
Value US $ Million	2856.92	2,132.84	33.95

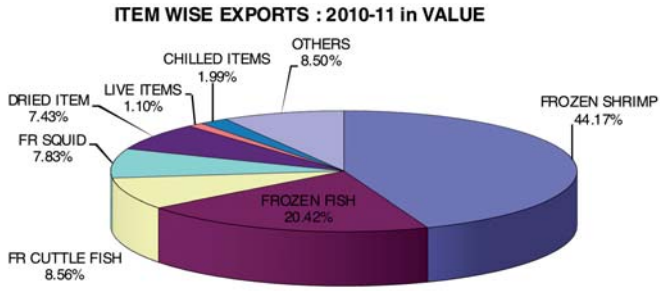


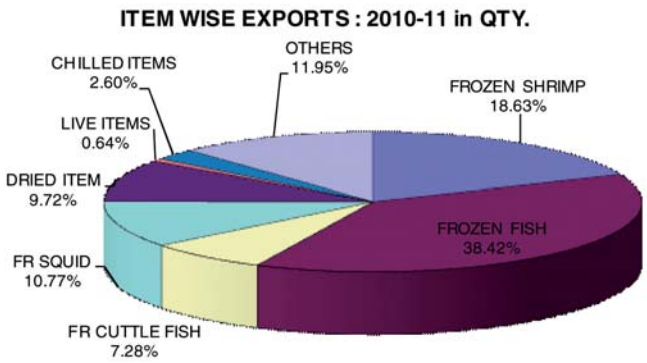
Fr. Cuttlefish recorded a growth of 19.56% in rupee value and 25% in US dollar terms. Unit value also increased by 34.18%, however, there is a decline in quantity (6.84%). Products like dried items, live items and chilled items showed an increase in US $ terms compared to the previous year. Export of Fr. Squid showed a remarkable increase of 42.53% in quantity, 62.31% in rupee value and 69.14% in US dollar realization. Unit value also increased by 18.67%.

MAJOR ITEM WISE EXPORT

Q: Quantity in Tons, V: Value in Rs. Crores, $: USD Million

ITEM		Share %	Apr-2010 - Mar-2011	Apr-2009 - Mar-2010	Variation	(%)
FROZEN SHRIMP	Q:	19	151465	130553	20912	16.02
	V:	44.32	5718.13	4182.35	1,535.77	36.72
	$:	44.17	1261.81	883.03	378.79	42.90
	UV$:		8.33	6.76	2	23.17
FROZEN FISH	Q:	38	312358	260988	51370	19.68
	V:	20.34	2623.89	2032.51	591.39	29.10
	$:	20.42	583.48	430.98	152.51	35.39
	UV$:		1.87	1.65	0	13.12
FR CUTTLE FISH	Q:	7	59159	63504	-4346	-6.84
	V:	8.56	1104.57	923.83	180.74	19.56
	$:	8.56	244.62	195.69	48.92	25.00
	UV$:		4.13	3.08	1	34.18
FR SQUID	Q:	11	87579	61445	26135	42.53
	V:	7.83	1010.57	622.63	387.94	62.31
	$:	7.83	223.67	132.24	91.43	69.14
	UV$:		2.55	2.15	0	18.67
DRIED ITEM	Q:	10	79059	47053	32006	68.02
	V:	7.40	954.94	981.11	-26.17	-2.67
	$:	7.43	212.22	208.72	3.50	1.68
	UV$:		2.68	4.44	-2	-39.49
LIVE ITEMS	Q:	1	5208	5492	-284	-5.17
	V:	1.10	142.15	139.14	3.01	2.17
	$:	1.10	31.46	29.52	1.95	6.60
	UV$:		6.04	5.37	1	12.42
CHILLED ITEMS	Q:	3	21118	28817	-7699	-26.72
	V:	2.00	257.54	264.49	-6.95	-2.63
	$:	1.99	56.93	55.87	1.06	1.90
	UV$:		2.70	1.94	1	39.05
OTHERS	Q:	12	97145	80584	16561	20.55
	V:	8.45	1089.67	902.47	187.20	20.74
	$:	8.50	242.72	196.81	45.92	23.33
	UV$:		2.50	2.44	0	2.31
TOTAL	Q:	100	813091	678436	134655	19.85
	V:	100	12901.47	10048.53	2,852.94	28.39
	$:	100	2856.92	2132.84	724.07	33.95
	UV$:		3.51	3.14	0	11.77





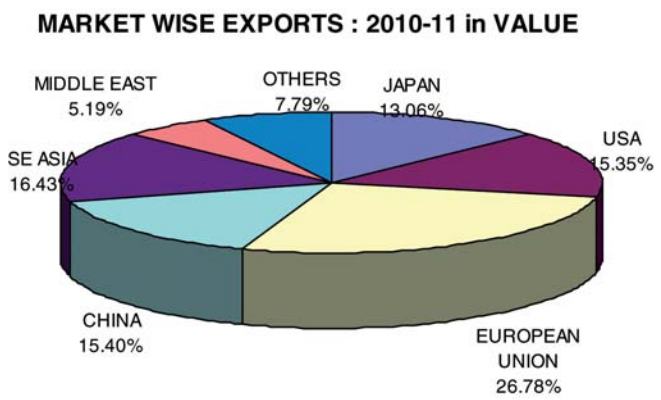
Major export markets

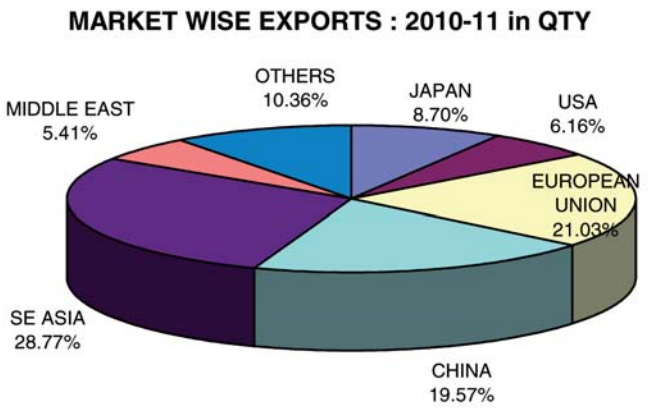
European Union (EU) continued to be the largest market with a share of 26.78% in US $ realization followed by South East Asia 16.43%, China with a share of 15.41%, USA 15.35%, Japan 13.06%, Middle East 5.19% and Other Countries 7.79%. The export to the US market showed an exponential growth of 50% in quantity, 97% in rupee value and 105% in US$ terms and unit value also increased by 8.75% compared to that of last year. The marine products exports have strengthened India's presence in Southeast Asia and Middle East where the increase in quantity has been 57% and 26% respectively. There is a significant increase in exports to African countries in comparison to previous year, although the total exports to Africa remains very low compared to other regions.

MARKET WISE EXPORT

Q: Quantity in Tons, V: Value in Rs. Crores, $: US Million

Country		Share %	Apr-2010 - Mar-2011	Apr-2009 - Mar-2010	Variation	(%)
JAPAN	Q:	9	70714	62690	8024	12.80
	V:	13.05	1683.39	1,289.58	393.81	30.54
	$:	13.06	373.00	278.56	94.44	33.90
USA	Q:	6	50095	33444	16651	49.79
	V:	15.43	1990.26	1,012.52	977.75	96.57
	$:	15.35	438.49	213.52	224.97	105.36
EUROPEAN UNION	Q:	21	170963	164800	6163	3.74
	V:	26.81	3459.40	3,013.33	446.07	14.80
	$:	26.78	765.15	637.40	127.75	20.04
CHINA	Q:	20	159147	144290	14857	10.30
	V:	15.33	1977.81	1,790.89	186.92	10.44
	$:	15.41	440.10	379.70	60.41	15.91
SOUTH EAST ASIA	Q:	29	233964	149353	84611	56.65
	V:	16.39	2114.48	1,479.55	634.93	42.91
	$:	16.43	469.36	314.85	154.51	49.08
MIDDLE EAST	Q:	5	43950	34924	9027	25.85
	V:	5.19	669.90	553.59	116.31	21.01
	$:	5.19	148.21	117.06	31.15	26.61
OTHERS	Q:	10	84257	88937	-4679	-5.26
	V:	7.80	1006.23	909.07	97.16	10.69
	$:	7.79	222.60	191.76	30.85	16.09
Total	Q:	100	813091	678436	134655	19.85
	V:	100	12901.47	10,048.53	2,852.94	28.39
	$:	100	2856.92	2,132.84	724.07	33.95





Outlook for 2011-12

MPEDA envisage an ambitious target of 4 Billion US$ Marine Products Exports for the year 2011-12. Increased production of *L.Vannamei* shrimp, increase in infrastructure facilities for production of value added items and the regaining pace of Japanese market after tsunami etc. are the helping factors to achieve this target.

PRICE LIST OF MPEDA PUBLICATIONS / PERIODICALS

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MARKETING NEWS

MPEDA's Participation in The International Seafood & Technology Expo Held at Tokyo, Japan

MPEDA has participated in the 13th International Seafood & Technology Expo organized during 27-29, July 2011 at Big Sight, Tokyo by taking 18 sq. m. stall area. Apart from Japan, exhibitors from Vietnam, Thailand, China, Malaysia, Korea, USA etc. had put up stalls. MPEDA stall was decorated with posters of various products and exhibited products such as Headless, PD, PUD shrimps including vannamei, frozen whelk meat, frozen cephalopods, frozen tuna loins, other frozen fish, freeze dried shrimp, value added products like fish biriyani, fish pickle, pasteurized crab meat, analogue products, canned tuna/whelk/tuna chunks in oil/brine, fish/shrimp curry etc. Many importers/wholesalers/supermarket operators visited MPEDA stall. A video in Japanese language on Indian vannamei production and products drew the attention of large crowd. Copies of the video were also given to interested parties. Most of the enquiries received were for vannamei. The carry bags with picture of vannamei has also helped in promoting Indian vannamei throughout the show. Many importers have evinced keen interest to visit India and MPEDA for further discussions in sourcing more seafood from India. A quantum jump in export of Indian vannamei to Japanese market is expected this year.

Mr Arun Goyal, Minister (Economic & Commercial) EOI, Japan visited MPEDA booth and held discussions on promotion of exports from India. A part of the trade enquiries received are published in this issue.

Products displayed in MPEDA Stall

Visitors in MPEDA Stall having discussions with Shri. K. Premachandran, Resident Director, MPEDA, TPO, Tokyo

MPEDA Organizes Basic Training for Ornamental Fish Development scheme beneficiaries of Maharashtra

MPEDA, RO, Mumbai has organized a 5-day basic Training Programme on ornamental fish breeding and rearing for the benefit of ornamental fish breeders registered with MPEDA in Maharashtra. The programme was held at College of Fisheries, Ratnagiri from 01.07.2011 to 05.07.2011. The training programme was inaugurated by Dr. Hukum Singh Dhakar, Head of the Aquaculture Dept., College of Fisheries. The training programme was attended by 22 ornamental fish breeders.

The topics included live and artificial feeds, water quality management, breeding and rearing of live bearers and egg layers, brood stock management, design and construction of ornamental fish hatcheries, diseases of ornamental fishes and control, aquarium tank preparation and setting, aquatic plants, and economics and project formulation on ornamental fish culture.

A field visit was arranged to understand the functioning and management of the MPEDA assisted Grade-I, Grade-II and Grade-III units. A group discussion was also arranged. The programme was co-ordinated by Shri Mangesh M. Gowda, Programme Manager (OFD), MPEDA for Maharashtra. From the institution side, Dr. M.M. Shirdhankar, Head, Department of Fisheries Resources, Economics, Statistics & Extension Education assisted the efforts.

Practical Demonstrations

MPEDA Announces India International Seafood Show - 2012

The Marine Products Export Development Authority (MPEDA) in association with the Seafood Exporters Association of India (SEAI) is organizing the 18th India International Seafood Show (IISS) at Chennai Trade Centre, Chennai, Tamil Nadu from 29th February to 2nd March 2012.

India International Seafood Show, one of the largest seafood fairs in Asia is a biennial event which provides a common forum for the seafood processors, exporters, importers, processing machinery/ equipment manufacturers, suppliers of inputs, other allied industries, investors, bankers, technicians, and technocrats from processing plants and quality control departments, policy makers from State and Central Government, Fishery Institutions, Research Organisations, trade promotion bodies, and shipping lines to interact.

The exhibition also covers display of variety of products, machineries, inputs etc. by various manufacturers and service providers from India and abroad as well. The details for participation is given below:

Stall /Delegate registration fee

Stall (3m x 3m)		Delegate		Registered Members of MPEDA or SEAI	
Indian Rs.	Overseas $	Indian Rs.	Overseas $	Stall Rs.	Delegates Rs.
75000	1750	10000	250	50000	6000

Early bird scheme

	Stall (3m x 3m)		Delegate		Registered Members of MPEDA or SEAI	
	Indian Rs.	Overseas $	Indian Rs.	Overseas $	Stall Rs.	Delegates* Rs.
Upto 30th Nov 2011 (less 20%)	60000	1400	8000	200	40000	4800
1st Dec to 31st Dec 2011 (less 10%)	67500	1575	9000	225	45000	5400

* The number of delegates per registered members of MPEDA or SEAI is restricted to TWO

- There would be two delegate pass and one attendant pass per stall of 9 sq .m.
- Discount of 25% on booking done by other countries Seafood Associations (subject to minimum of 45 sq. m.) and one slot in Technical Session (If interested) will be given.
- The delegate fee includes complimentary lunch for 3 days.

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QUALITY FRONT

MPEDA's participation in the training /workshop held at National Institute of Nutrition (NIN), Hyderabad

Biotech Consortium India Ltd., New Delhi has organised a training-cum- workshop on "Role of Risk Analysis in the Development and Implementation of Food Safety Programmes and Standards" at the National Institute of Nutrition (NIN), Tarnaka, Hyderabad from 20-22, June 2011. MPEDA has nominated five participants for the workshop. Dr.Vibha Ahuja, General Manager, Biotech Consortium India Ltd. welcomed the participants and Dr. B.Sesikeran, Director, NIN inaugurated the programme.

In the three-day training workshop, various topics related to risk analysis right from introduction to Risk Analysis/Risk Assessment, Tools and Data Needs for performing Quantitative Risk Analysis, Principles and Concepts of Risk Management, use of Risk Analysis in Developing Food Safety Programmes and Standards, Effectiveness of Risk Communication, Allergens as an Emerging Food Safety Risk etc were dealt in detail together with case studies on different topics. The faculty consisted of Dr. Robert L Buchanan & Dr. Abani K Pradhan (both from University of Maryland, USA), Dr.Bruce Ross and Dr. Dan Geffin (both from US FDA), Mr. David Leishman (US Embassy), Dr. Sesikeran & Dr. Vasanthi Siruguri (both from NIN, Hyderabad), Dr. Richard Goodman (University of Nebraska - Lincoln, USA), Dr. K. Nagaraju and Dr. Ashok Gupta (Medical Professionals) had handled various technical sessions during the training workshop.

MPEDA has deputed Shri Thampi Sam Raj, Joint Director (Training), Shri. K.N.Vimal Kumar, Joint Director (QC), Shri V.I. George, Deputy Director (Lab), Shri.K. Sasidharan Nair, Assistant Director (QC) and Dr. O.K. Sindhu, Technical Officer (QC) in the workshop. Dr. Sesikeran, Director, NIN has distributed Course certificates to the participants who have successfully completed the programme.

Shri K.N. Vimal Kumar, Joint Director (QC) receiving the Course Certificate from Dr. B. Sesikeran, Director, NIN.

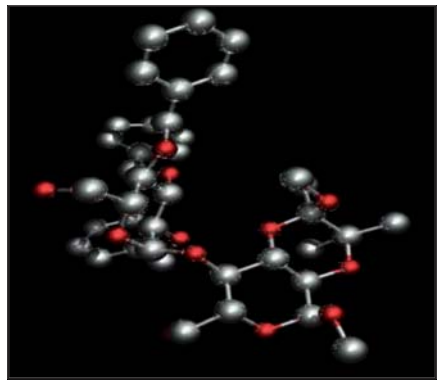
A view of the participants along with the faculty

Importance of Pharmacokinetics in Aquaculture

Abhilash EC, Junior Technical Officer (QC), MPEDA, Cochin

Worldwide, aquaculture has increasing social and economic impact through the production of food, contribution to livelihoods and generation of income. Natural water is a source of etiological agents such as bacteria, fungus and virus. Intensively cultured fish and shellfish are naturally susceptible to most bacterial, fungal and parasitic infections, particularly at times of stress. Disease management is the toughest job in aquaculture and formerly there were several reports world wide, which revealed that antibiotics or pharmacologically active substances were used in aquaculture to prevent disease. The use of chemicals in aquaculture systems for various purposes is widely recognized. At the international level, the United Nations Food and Agriculture Organization (FAO) adopted a Code of Conduct of Responsible Fisheries in 1995 that included aquaculture. Furthermore, Article 9 of the Code, specific to aquaculture, was analyzed and expanded in a subsidiary document in 1997. This latter document called for the global aquaculture industry to make safe and effective use of feeds, feed additives, veterinary drugs and other chemicals, and promote the use of aquaculture practices and methods which reduced hazards (in fish as human food).The occurrence of pharmacologically active substances in the aquatic environment has been investigated in several studies in Austria, Brazil, Canada, Croatia, England, Germany, Greece, Italy, Spain, Switzerland, Netherlands and the U.S. Such antibiotics and synthetic antibacterial agents when used in aquaculture farm bring problems such as an increase in drug-resistance strains of bacteria and possibility that drug residue in aquatic animals could cause hygiene and public health problems. Use of large quantities of antibiotics in aquaculture thus has the potential to be detrimental to fish health, to the environment and wildlife, and to human health. For all these reasons, excessive antibiotic use in aquaculture should be of high concern to the aquaculture industry and its regulators, to public officials dealing with human and veterinary health and with the preservation of the environment, and to non-governmental organizations dealing with these issues.

Use of veterinary drugs is regulated in the European Union according to the legal framework defined in the Directive 2001/82/EC and has approved few antibiotics for use at MRL levels or permissible limits. Different regulatory bodies have made studies on antibiotics and synthetic antibacterial agents that were used for the production of food. It was considerably noted that prevention of disease is also important. Assessment or estimation of withdrawal period of drugs in any biological matrices is important for setting up of optimum concentration. Council directive 96/23 EC regulate the control of pharmacologically active compounds in products of animal origin, that are categorized Group A substances or banned substances and Group B substances, establishing permissible limit which mainly comprises Oxolinic acid, Sulfonamides, Oxytetracycline etc. All therapeutants have a withdrawal time - a period of time after treatment-after which the aquatic animals are considered drug free and the rate of such changes is known as Pharmacokinetics. Therefore, pharmacokinetics and residue elimination are significant in the determination of optimal dosage regimens and in establishing safe withdrawal periods in farmed fishes/shrimp. There are many aquatic species that are subjected to assess the elimination of various antibiotics introduced by oral, bath and injection methods.



Structure of therapeutants

Pharmacokinetics studies of quinolones in cultured eels revealed the elimination of such pharmacologically active substances in plasma and muscle. It has been reported that the bath treatment of such substances resulted a lower concentration in fish and found that temperature, pH and water hardness influenced uptake. There are several research works in this regard, which revealed that the accumulation of substances is also depending on the nature of the substances and environmental factors of ponds such as light and microbial activities. But in the case of tetracycline, the elimination is slower than quinolones in aquaculture environments. Anatomy of each

aquatic animals is different from others and therefore the absorption of pharmacologically active substances is also varies from species to species. The shell, which is absent in finfish, has demonstrated to be a site of pharmaceutical deposition in crustaceans. Furthermore, in crustaceans the volume of haemolymph comprises 22% of the total body weight, compared to 5% in finfish with the volume of distribution directly related to tissue binding and inversely related to plasma protein binding. Pharmacokinetics in kuruma shrimp (*Penaeus japonicus*) studied by Japan researchers revealed that distribution and elimination of half-life of Oxolinic acid is comparatively shorter than oxytetracycline (OTC). Pharmacokinetics of Oxytetracycline (OTC) in the white shrimp (*Litopenaeus setiferus*) from Northwest Mexico reports that despite the simple anatomy, small size and short life span of shrimp, the disposition of OTC in shrimp after intravascular dosing showed pharmacokinetic characteristics indicative of extensive tissue distribution, such as a long elimination half-life and a high volume of distribution, with the low potential for OTC residues in tail muscle tissue. In the case of black tiger shrimp from Japan, *Penaeus monodon*, pharmacokinetics of residual OTC in muscle was reduced by 30-60% by boiling, baking and frying, whereas in shell, OTC was reduced by 20% in every cooking method. It was reported that the half life of sulfonamides and its elimination in fish is almost related to its anatomy. Protein binding in finfish is always higher than that in crustaceans. Studies in Norway also reported that the withdrawal period of quinolones is very short for fishes, especially Oxolinic acid.

In Good agriculture practices, veterinary medicinal products are used by responsible professionals supervised by veterinarians. Pharmaceuticals are designed to positively affect the health of humans or animals by affecting their physiological state in a very specific and efficient manner, they often have substantial adverse effects. It is important that therapeutic regimes are designed to maximize efficacy and thereby minimize the risk of the development of resistant pathogen. In that respect, studies of pharmacokinetics properties of drugs in aquaculture is an important tool for the establishment of optimal dosages regimes and thus the promotion of their correct use and also produce contaminant free food.

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Ms. T.A. Aneesa, Junior Technical Officer, MPEDA, QC Lab, Cochin (second from left) represented MPEDA in the second Saskatoon International Workshop on "Validation and regulatory analysis focusing on veterinary drugs, pesticides and contaminants in food" held in Saskatoon, Canada from June 19th - 22nd 2011.

Development of aquaculture in *Padasekharams* of Kerala

The State of Kerala has rich fresh water resources, fed by heavy monsoon showers. Due to water logging, most of the low lying paddy fields (*Padasekharams*) located in the districts of Alapuzha, Kottayam, Pathanamthitta, Thrissur and Malappuram practise only one crop of paddy in a year. More than 50,000 ha of paddy fields are available in these districts, and the majority of these fields are lying fallow after one crop of paddy cultivation.

Advantages of utilization of *Padasekharams* for aquaculture

The pilot level introduction of aquaculture in some of the *Padasekharams* of the State have already proved the enhancement of paddy productivity, when practiced in rotation with aquaculture. The State Agency for Development of Aquaculture (ADAK) as well as MPEDA have taken some initiatives in this line. Some of the advantages of paddy-cum-aquaculture are:

- The increase in natural fertility of the paddy fields due to the metabolites released by the fish - as a result the requirement for artificial fertilization is lesser.
- Biological control of pests in paddy fields by fishes - resulting in lesser use of chemical pesticides.
- Natural removal of weeds by fishes such as grass carp - resulting in cost reduction for preparation of field for paddy cultivation.
- Increase of 15-25% paddy productivity.
- Reduction of expenditure on paddy crop by 25-40 %.
- Aquaculture practice during off season of the paddy crop brings additional revenue and additional employment opportunities.
- Increasing prawn/fish production - augments exports/foreign exchange realization.

The Kuttanad region in Alappuzha, Kottayam, Pathanamthitta districts as well as the *Kole* lands of Thrissur and Malappuram districts offer excellent potential for aquaculture development. The development agencies and support packages in the respective regions can be coordinated under a single umbrella to promote a planned and systematic programme for development.

MPEDA's initiation for aquaculture in *Padasekharams*

Considering the potential of *Padasekharams* for aquaculture development purpose, MPEDA has already initiated a scheme to support them. Under this scheme, the farmers are given necessary technical trainings by MPEDA in aquaculture and carry out several extension activities to create awareness. MPEDA is also implementing a financial assistance programme to support the *Padasekharams* @ 25% of capital cost.

MPEDA has so far technically assisted 53 and financially aided 14 *Padasekharams* to take up aquaculture.

Scope for Future Development

The fresh water prawn (Scampi) production was about 400 mt from the *Padasekharams* of Kerala, while the fish production was about 1,200 mt during 2010-11. Considering the potential available in the State, the production reported is very low. There is immense scope for sustainable development of this sector.

The demand for organic products is increasing in the global market. The development of organic paddy-cum-organic aquaculture practices in selected *Padasekharams* can ensure mutually supporting production systems, in an eco friendly manner. MPEDA is implementing a scheme to support organic aquaculture by rendering technical assistance to organic aqua farmers and also meets a part of the certification and input cost through an assistance programme.

A proposal submitted is under active consideration of the State Government and MPEDA moots an ambitious plan for blue green revolution in the state, through environmentally sustainable practices.

- Prepared by **Shri P.N. Vinod**,
Assistant Director (AQ),
IOAP, MPEDA

MPEDA organises Inter State Study Tour to Nellore (AP), Karaikal (Puducherry) and Thoduvai (Tamil Nadu) for aquafarmers

Aquaculture in Malabar region is greatly being centred on Shrimp Aquaculture; with the candidate species *Penaeus monodon* and *P.indicus*. MPEDA Sub-Regional Centre (Aqua.), Kannur conducted a series of training programmes and awareness campaigns among shrimp farmers. Discussions are also being held with the Farmers' Associations pointing out alternative culture methods by species diversification. As a result of which, an interstate study tour was conducted during March 2011 to Nellore (Andra Pradesh), Karaikal (Puducherry) and Thoduvai (Tamil Nadu) for acquiring a glance of various diversified aquaculture practices being successfully conducted in those states.

A total of 8 farmers have participated in the tour under the supervision of MPEDA officials of SRC, Kannur. As per their request through FFDA, Kannur, a group of 11 farmers guided by Sri K Surendran, Scientific Assistant, FFDA, Kannur, also participated in the tour.

The study tour team visits a L. vannamei farm at Iskapally village, Nellore

Visit to *Litopenaeus vannamei* farms at Iskapally, Nellore District

The team visited *L. vannamei* farm in Iskapally, Nellore. The high density stocking at a considerably higher capital investment and operational expenses was an eye opener to the interested. They interacted with the farmer concerned in a very effective way, dealing with all the aspects of culture from pond preparation, licensing, seed stocking, grow out, harvest and marketing. They were explained on registration and mandatory requirements for *L. vannamei* farming. The team also visited some other farms being newly constructed with effluent treatment system and reservoir.

Visit to M/s. Alfa Hatchery, Korutturpalayam, Nellore District

The team then visited M/s. Alfa Hatchery, Koruttur Palayam, Nellore. Sri Harilal, Hatchery technician, Alfa Hatchery received the team and introduced the farmers to the various facilities at the hatchery, licensed for *L.vannamei* seed production. The team got the rare opportunity to get familiarized to all the phases a seed passes through, till it reaches the farm in a ready to stock condition.

Sri Harilal, Hatchery Technician, Alfa Hatchery, Nellore describes the seed production procedures of L. vannamei

Visit to R G C A Seabass / Mud Crab Hatchery Facility, Thoduvai, Seerkali, Tamil Nadu

At RGCA Seabass/Mud Crab Hatchery facility in Thoduvai, Sri S. Pandiarajan, Hatchery Manager and team received the farmers.

RGCA officials introduced the farmers to various sections of the hatchery from water intake system to rearing sections of Asian Seabass (*Lates calcarifer*) and Mud Crab (*Scylla serrata*). The brood stock, maturation system, Crablet production etc. were a fresh experience to the farmers and many of them expressed interest to take up crab farming. The semi automated recirculation systems and innovative seed production facilities of Asian Seabass generated great interest in farmers.

RGCA officials made powerpoint presentations on the various techniques and technologies involved in seed production, rearing and packing procedures of both Asian Seabass and Mud crab.

Sri Y.C. Thampi Sam Raj, Project Director (RGCA) with the farmers at RGCA Head Quarters

Visit TO R G C A Head Quareters, Thirumullaivasal, Tamil Nadu

The team also visited RGCA Head Quarters and Training Facility at Thirumullaivasal, Tamilnadu. A brief presentation on the background, objectives, status, facilities and projects of RGCA was made by Sri Ganapathi, APM of RGCA. Sri Y C Thampi Sam Raj, Project Director, RGCA interacted with the farmers. He has suggested the farmers to make use of the existing demonstration programmes, such as Seabass cage culture, Mud crab farming etc. for sustainable aquaculture by species diversification.

RGCA Seabass/Mud Crab Demonstration Project, Karaikal, Puducherry

The team visited RGCA, Seabass/ Mud Crab Demonstration Farm at Karaikal. Sri Ganesh, Assistant Project Manager, made a detailed presentation on Seabass cage culture in farm as well as Mud Crab farming. He described the stages of seed production, seed transportation, grow out and harvest of the both species. The interactive sessions were very useful for the farmers.

The farmers under SRC (Aqua.) Kannur participating in ISST

After the presentations, the farmers were taken to the demo ponds, where Seabass are being cultured. The demonstration of Sea bass feeding was a precious experience and a matter of excitement for the farmers. The mud crab nursery farm was also visited. Sri Ganesh and the technicians described the procedures on nursery rearing, packing and transportation of crablets.

A review on the Interstate study tour was arranged. All the farmers/ beneficiaries spoke on the various issues relating to there respective areas. They unanimously expressed their gratitude to MPEDA and FFDA for organising this valuable tour programme. They requested to organize another tour for other interested aqua farmers too. There was also a discussion on the current

production trends of *P. monodon* in Malabar Area, risks and disease factors, and creation of a master plan for taking up species diversification especially by Sea Bass (Open Pond Culture) / Mud Crab. Sri Geo Christi Eapen, Field Supervisor, MPEDA, and Sri K V Sruendran, Scientific Assistant, FFDA, Kannur, replied the queries of farmers. The Seabass nursery rearing and seed supply by M/s. Matsyafed Hatchery, Mopla Bay, Kannur under MPEDA technical assistance was mentioned and also suggested to go for Seabass stocking by collecting 7.5 to 10 cm juveniles for limiting grow out culture period and attaining better survival. The farmers also expressed their desire to have a common facility for quality assured, disease free shrimp seed and supply facility which has to be taken up by the government agencies, which is inevitable for the hassle free shrimp aquaculture in Kerala.

CORRIGENDUM

Readers' attention is invited to the news item "US DOC announces final..... Review" in page 31 of May-June 2011 issue of this Newsletter.

The review specific average rate may be read as **1.69%** instead of 1.60% as mentioned. Error is regretted.

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NEWS SPECTRUM

RGCA announces 'Workshop on Shrimp Pathology' in collaboration with Aquaculture Pathology Laboratory, University of Arizona, USA

Rajiv Gandhi Centre for Aquaculture (RGCA) is the R & D arm of the Marine Products Export Development Authority under the Ministry of Commerce & Industry, Govt. of India. RGCA is actively involved in the development of new aquaculture technologies and supporting the existing available technologies in India to strengthen the aquaculture production base in the country for increased exports of marine products. RGCA has established Technology Transfer, Training and Administrative Complex at Sirkali, Tamil Nadu for disseminating the technologies evolved through training the professionals, fishermen, aquaculture farmers and entrepreneurs from all over the country. RGCA also established Central Aquaculture Pathology Laboratory and Central Aquaculture Genetics Laboratory at this complex to support the Aquaculture industry.

RGCA is organizing Shrimp Pathology Workshop in collaboration with Aquaculture Pathology Laboratory (APL), Department of Veterinary Science and Microbiology, University of Arizona at this complex at Sirkali, from 14th to 19th Nov.2011.

Aquaculture Pathology Lab of University of Arizona is a specialised laboratory committed for shrimp pathology diagnostic services for more than three decades. APL is headed by Dr.Donald V Lightner, Professor, Department of Veterinary Science and Microbiology, University of Arizona and supported by Dr.Carlos Pantoja, Dr.Linda Nunan and Dr.Kathy Tang Nelson. APL is a World Organization for Animal Health (OIE) reference laboratory and United States Department of Agriculture Animal and Plant Health Inspection Service - approved laboratory for crustacean pathogens. APL is serving international shrimp farming industry for 30 years by developing diagnostic methods for control and prevention of shrimp diseases; by being part of the team that produced the first domestic pathogen-free stocks of the Pacific white shrimp; by training more than 1,000 national and international shrimp disease specialists; and by identifying new shrimp pathogens and diseases. Much of what is known about shrimp diseases and the methods to diagnose and manage them was developed at the APL

Workshop

1. Basic Shrimp Pathology

This 2-day workshop from 14th to 15th -November 2011 is designed to provide and share latest information and developments on Shrimp Pathology to the professionals, mainly shrimp farmers/hatchery operators/ technicians and extension officials associated with Indian Shrimp Aquaculture. This is open for 20 participants from Industry and registrations are issued on first-come-first-serve basis.

Course Contents

- Introduction to gross anatomy and normal histology of Penaeid Shrimp
- Major types of diseases affecting shrimp: Disease diagnostic and detection methods and the equipment used for these purposes
- Viral diseases in shrimp and their management
- Bacterial and other diseases in shrimp and their management
- Bio-security in farms and hatcheries
- Disease identification methods
- Demo on fixation procedures for samples for histology and sampling methods for molecular tests.

2. Advanced Shrimp Pathology

This 6-day workshop aims to provide hands on training on Shrimp Pathology for shrimp pathology professionals and technicians in shrimp aquaculture sector. This is a first time opportunity for shrimp pathologists working in shrimp farms/hatcheries/laboratories in India to attend an advanced Shrimp Pathology training programme conducted by University of Arizona in India. This is open for 10 participants from industry and registrations are issued on first come first serve basis.

Course Contents

This is a continuation of the Basic Shrimp Pathology Workshop and will include individual lectures and laboratory sessions on:

- Viral Diseases - WSSV, IMNV, TSV, IHHNV, YHV, BP, MBV, MoV, LSNV, SMV and HPV
- Bacterial Diseases - Vibriosis, Necrotizing Hepatopancreatitis (NHP), Spiroplasma penaei, Streptococci
- Idiopathic Hyaline

Granulomatous Syndrome - (IHGS)

- Review of molecular methods for detection of shrimp pathogens
- Practical sessions on PCR for TSV and WSSV
- Histopathology of IMNV, WSSV, IHHNV and TSV
- DNA & RNA extraction,Spectrophotometer measurements of extracted DNA & RNA

Training Faculty & Facility

Dr. Carlos R. Pantoja and Dr. Linda Nunan of Aquaculture Pathology Laboratory, University of Arizona (an OIE reference laboratory for diseases of penaeid shrimp) are internationally well known scientists. They forms part of a team that provides disease diagnostic services to the national and international shrimp farming industry and conducts research on new and emerging diseases of penaeid shrimp.

The facility, equipments,reagents and consumables for both the workshops are provided by RGCA.

Who Should Attend?

1) Basic Shrimp Pathology: Graduates in Science preferably associated with Shrimp Aquaculture Industry in India.

2) Advanced Shrimp Pathology: Post graduates in biological/chemical science working in Shrimp Disease screening Laboratories involved in Shrimp Aquaculture Industry.

Registration Fees

Registration fee for Basic Shrimp Pathology - Rs. 5,000/-

Registration fee for Advanced Shrimp Pathology - Rs. 10,000/-

How to apply?

Apply through the registration form supplied with the workshop brochure or downloaded form from MPEDA website. Send the filled registration form along with fee to the workshop venue address. Registrations are issued on first come first serve basis. Registration confirmation and receipt will be e-mailed to the participants after processing. No refund of registration fee will be entertained. Last Date for Registration: 15th October 2011

Accommodation and Conveyance

Double occupancy accommodation will be arranged by RGCA at the Annamalai University Guest House, Chidambaram, TamilNadu. Conveyance will be provided to the participants from the place of stay to the venue and back at no additional cost.

How to reach Workshop Venue?

By Train:

Nearest Railway stations

1) Sirkali- 6 kms

2) Mayiladurai - 20 kms

3) Tiruchirapalli - 160Kms.

By Bus:

1) From Chennai 250 Kms- Private travel bus (Rathimeena, Univercel etc) and TamilNadu State Transport Buses operate on this route.

2) From Tiruchirapalli 160kms - Both private and TamilNadu State Transport Buses operate on this route.

Contact:

Shri. V.N. Biju,
Workshop Co-ordinator
Phone: 04364 -291501/ 291503;
+91 9486702157,
email: rgcapatholab@gmail.com

CIFT Personnel receive meritorious awards

1) Jawaharlal Nehru Award

Dr. George Ninan, Senior Scientist (Fish Processing), CIFT, Cochin received the 'Jawaharlal Nehru Award' for outstanding Post Graduate Agricultural Research - 2010 of ICAR, New Delhi for his Ph. D. thesis entitled, "Optimization of process paraameters for the extraction of gelatin from skin of freshwater fish and evaluation of physical and chemical properties" under the guidance of Dr. Jose Joseph, Principal Scientist (Retd.), Fish Processing, CIFT, Cochin.

The award was received from Shri Sharad Pawar, Honourable Union Minister for Agriculture, Food and Public Distribution on 16th July, 2011.

2) Rashtriya Gaurav Award

Dr. Femeena Hassdan, Senior Scientist, Quality Assurance and Management, CIFT, Cochin received the 'Rashtriya Gaurav Award' for meritorious services, outstanding performance and remarkable role in fisheries instituted by India International Friendship Society, New Delhi.

The award was received from Dr. Bhishma Narain Singh, Former Governor of Assam & Tamil Nadu at a Seminar on Economic growth and national integration held at New Delhi on 16th July 2011.

Agri-Business Incubator @ CIFT: An initiative towards fostering entrepreneurship

The Zonal Technology Management & Business Planning and Development (ZTM&BPD) Unit established at the Central Institute of Fisheries Technology, Cochin is an innovative venture designed to assist entrepreneurs in fisheries sector for the development of new technology based start-up businesses. It is aimed at nurturing young entrepreneurs by helping them to survive and grow in a congenial atmosphere during their startup period.

ZTM-BPD Unit at CIFT is a "One Stop Shop" for entrepreneurs who can receive pro-active, value-added support in terms of technical consultancy, and access to critical tools such as entrepreneur ready technologies, vast infrastructure and other resources that may otherwise be unaffordable, inaccessible or unknown. The unit will provide links to industry; business support services to enhance and develop business, upgrade skills and techniques, technological advice and assistance with intellectual property protection, initial test marketing support, and access to potential investors and strategic partners. The services of the unit can be availed by start-up companies as well as established companies looking to diversify or test new ideas. The facilities can be used to test out processes and new products.

A state-of-the-art generic semi-commercial production facility for developing value added products from fish will be made available to incubating entrepreneurs.

The facilities can be used to test out processes and new products for fisheries. The Pilot Plant Processing Facility consists of production lines for Pre-processing, Curing & Drying, Smoking, Breading & battering, Extruded products, Retort pouch processing, Sausage production, Modified Atmosphere Packaging, Canning, Chitin & Chitosan, Glucosamine Hydrochloride and Value Added Products from Fish & Shell Fish.

Apart from providing technology related assistance the ZTM-BPD unit can also provide facilities such as furnished air conditioned office space, conference room with LCD projection facility, internet and communication facility, library and well equipped laboratory.

The facility is also well equipped to help companies develop their business plans, find a site for commercial operations, develop and protect intellectual property, put together a management team, secure investment capital, and to go commercial.

For enrollment and registration please get in touch with ZTM-BPD at ciftbpdu@gmail.com. Or log on to www.agriincubator.com or meet directly at:

ZTM-BPD Unit,
Central Institute of Fisheries Technology,
CIFT junction,
Willingdon Island,
Cochin - 682029
Call us: 91 - 9633028796

CIFT signs MoU with Uniloids Biocience

Central Institute of Fisheries Technology, Cochin signed one of a kind Memorandum of Understanding with Hyderabad based company, M/s Uniloids Biosciences. With this MoU, Uniloids Biosciences will have access to the unique and innovative technology developed by CIFT to convert process waste of prawns to Chitin and Chitosan. Chitin and Chitosan find wide usage in various industries like pharma, food processing, cosmetics etc. Under the MoU, the Zonal Technology Management-Business Planning & Development (ZTM-BPD) Unit along with the Divisions of Fish Processing and Quality Assurance and Management of CIFT will further provide training and support to M/s Uniloids Biociences for commercializing the technology.

The MoU was signed by Dr. T.K. Srinivasa Gopal, Director, on behalf of CIFT, Cochin and Shri Chandra Sekhar Yadav, Managing Director, M/s Uniloids Biosciences Pvt. Ltd., in the presence of the members of Institute Technology Management Unit and ZTM-BPDU in a simple function held at CIFT, Cochin on 13th June, 2011. Signing the MoU, Dr. Srinivasa Gopal said that the deal indicated the latest demand for technologies developed at various institutes in India. CIFT can cater to some unique demands of the industry. It is prepared to facilitate transfer of commercially viable technologies and to extend its expertise in the field. The industries cutting across all domains are urged to access CIFT to understand and then commercially exploit the various technologies developed in the labs.

Dr.T.K. Srinivasa Gopal, Director, CIFT handing over the MOU to Shri Chandra Sekhar Yadav, MD, Uniloids Biosciences, Hyderabad.

WTO concludes Vietnam's shrimp lawsuit

The World Trade Organization (WTO) has stated that the US application of the zeroing methodology for calculating anti-dumping taxes is in violation of the organization's rules.

The final conclusion on July 11 supports two of Vietnam's three claims in its lawsuit against the US Department of Commerce over the latter's use of zeroing against frozen shrimp shipped from Vietnam. The WTO panel stressed that the US's application of zeroing created greater dumping margins for imports from Vietnam, pushing up the taxes imposed on them and causing big losses for Vietnamese shrimp exporters.

The US has fixed anti-dumping tax rates on most Vietnamese shrimp exports at 4.13-25.76 percent.

The WTO also agreed with Vietnam's second major claim. It says that the US using zeroing to calculate the common tax rates for the second and third administrative reviews was inconsistent with WTO regulations. The nationwide tax rates the US imposes on countries such as Vietnam and China were usually much higher than the normal calculations that conform to WTO regulations, which brought about considerable losses to exporters. The WTO also concluded that the US employed available data to calculate its nationwide tax rates in the second and third reviews, which violated the WTO's regulations.

According to the WTO regulations, both sides now have 60 days to appeal the WTO's decision.

The Vietnam Association of Seafood Exporters and Producers and their lawyers say that if Vietnam wins the lawsuit, it will increase the competitiveness of its frozen shrimp on the US market because Vietnamese exporters will not have to pay anti-dumping fees and they would be completely free of anti-dumping taxes.

World's oceans in 'shocking' decline, say scientists

By Richard Black

The oceans are in a worse state than previously suspected, according to an expert panel of scientists. In a new report, they warn that ocean life is "at high risk of entering a phase of extinction of marine species unprecedented in human history".

They conclude that issues such as over-fishing, pollution and climate change are acting together in ways that have not previously been recognised. The impacts, they say, are already affecting humanity

The panel was convened by the International Programme on the State of the Ocean (IPSO), and brought together experts from different disciplines, including coral reef ecologists, toxicologists, and fisheries scientists. Its report will be formally released later this week.

"The findings are shocking," said Alex Rogers, IPSO's scientific director and professor of conservation biology at Oxford University. "As we considered the cumulative effect of what humankind does to the oceans, the implications became far worse than we had individually realised.

"We've sat in one forum and spoken to each other about what we're seeing, and we've ended up with a picture showing that almost right across the board we're seeing changes that are happening faster than we'd thought, or in ways that we didn't expect to see for hundreds of years."

These "accelerated" changes include melting of Arctic sea ice and the Greenland and Antarctic ice sheets, sea level rise, and release of methane trapped in the sea bed.

But more worrying than this, the team noted, are the ways in which different issues act synergistically to increase threats to marine life. Some pollutants, for example, stick to the surfaces of tiny plastic particles that are now found in the ocean bed.

This increases the amounts of these pollutants that are consumed by bottom-feeding fish.

Plastic particles also assist the transport of algae from place to place, increasing the occurrence of toxic algal blooms - which are also caused by the influx of nutrient-rich pollution from agricultural land.

In a wider sense, ocean acidification, warming, local pollution and overfishing are acting together to increase the threat to coral reefs - so much so that three-quarters of the world's reefs are at risk of severe decline.

IPSO's immediate recommendations include:

stopping exploitative fishing now, with special emphasis on the high seas where currently there is little effective regulation mapping and then reducing the input of pollutants including plastics, agricultural fertilisers and human waste making sharp reductions in greenhouse gas emissions.

Carbon dioxide levels are now so high, it says, that ways of pulling the gas out of the atmosphere need to be researched urgently - but not using techniques, such as iron fertilisation, that lead to more CO_2 entering the oceans.

Source: Richard Black, BBC News

WTO favors Mexico in tuna dispute with US

The WTO has ruled in favor of Mexico in a dispute over tuna with the United States that began more than 20 years ago, a high-ranking source close to the negotiations told.

The WTO's decision lifts restrictions for Mexico to ship the fish to the United States, barred because it does not carry a "dolphin safe" label. The United States stopped selling Mexican tuna in 1991, citing complaints that the fishing techniques used by its neighbor were hurting the local dolphin population. Mexico has said those concerns are unfounded because its fishermen follow international standards. Mexico filed a complaint with the WTO in 2009 claiming the labeling rules accounted for unfair trade practices. Both countries were told about the WTO decision in Mexico's favor on July 8, but the final document has yet to be made public. "By the end of 2012 or at the beginning of 2013, Mexican tuna should be entering the U.S. market," a source speaking on condition of anonimity said. "What we have to wait for now is that the WTO translates (the document) into French and Spanish." While the United States can appeal the WTO decision, the source said it was unlikely that the trade organization's ruling would change. The U.S. Trade Representative's office confirmed the WTO panel issued a report on the case but said it could not comment because the results are still confidential. "The United States will continue to vigorously pursue the objectives of the dolphin safe labeling provisions," U.S Trade Representative spokeswoman Nkenge Harmon said.

Source: MEXICO CITY

Positive and natural results from EU-funded bluefin tuna project

A team of EU-funded researchers from Spain have, for the second year running, successfully harnessed bluefin tuna (BFT) spawn without using hormonal induction. This means the team will be able to closely study the reproductive habits of this endangered species in captivity.

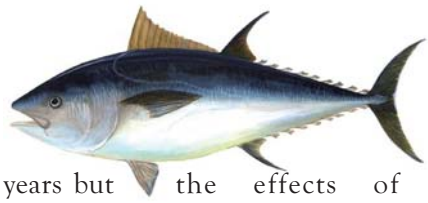
The work was carried out as part of the SELFDOTT project ('From capture based to SELF-sustained aquaculture and Domestication Of bluefin tuna, Thunnus tynnus'), which received a boost of EUR 2.98 million under the 'Food, agriculture and fisheries, and biotechnology' Theme of the EU's Seventh Framework Programme (FP7).

The team, from the Murcian Oceanographic Centre, part of the Spanish Institute of Oceanography (IEO), is hoping that this year's eggs will prove luckier than their previous yields, which had low success rates as the BFT only survived on average for between 73 and 110 days.

This is the third year of the project and the second in which the team has obtained the eggs by natural means. In 2009 the first spawnings were obtained after hormonally inducing the broodstock with GnRH implants and in 2010 the spawning were obtained spontaneously without the need for hormonal induction.

The fact that the spawning has now been obtained naturally two years in a row indicates that the 60-strong broodstock has reached a very important degree of domestication as a result of their 4-year stay in two floating cages 25 m wide by 20 m deep in the bay of El Gorguel (Cartagena). These massive spawnings can even be as large as over 10 million eggs in a single day.

BFT has been a crucial part of the Mediterranean diet for thousands of



years but the effects of overfishing has led to the setting up of quotas to preserve the species. But by using artificial aquaculture techniques, a process of farming fish and other natural, water-related produce in controlled environments rather than harnessing them from the ocean and sea, the quantities of BFT required by consumers can be achieved, relieving some of the pressure on endangered natural populations and contributing to the eventual recuperation of the species in the wild.

Species such as sea bream, sea bass, turbot and salmon are currently widely produced using aquaculture techniques.

Now the team plans to develop new techniques that can help its members study embryonic and larval development and the BFT biological cycle, which would hopefully lead to the production of fry (tuna offspring) through aquaculture techniques independent from natural populations.

At the same time, suitable and environmentally performing feeds for the growout of BFT will be developed, thus reducing or eliminating the practice of raw fish importation and feeding by the fattening industry.

These new stages of the research will be carried out with the 13 other SELFDOTT partners, made up of government bodies, research institutes and industry organisations from France, Germany, Greece, Israel, Italy, Malta, Norway and Spain.

Source: Cordis News

Australians develop video system to monitor fish

A team of Australian researchers aims to develop software that will automate the recognition and measurement of fish from underwater stereo-video imagery.

Stereo-video systems are used widely for fish monitoring and to replace diver observations, but they require manual processing of the imagery. The stereo-video technology has been applied to measure biomass and growth rates of aquaculture species, bottom-dwelling finfish and as a tool for monitoring the impacts of biodiversity conservation strategies.

The researchers from the University of Western Australia plan to automate the thousands of hours of stereo-video footage that are routinely captured. The goal is to develop automatic detection, tracking and measurement of fish in underwater stereo-video using 3D deformable models.

"There is a huge amount of cost associated with that (manual processing), but what we hope to do is minimise or reduce the time period that it takes to do the image analysis by incrementally automating the steps," said Euan Harvey from UWA's School of Plant Biology. He said there were about 400 to 500 species of fish just on the West Australian coastline that were counted and measured routinely. The three-year project initially aimed to automate the measurement and then look at how to automate recognition of fish.

Professor Harvey said the team's work would most likely be applied to aquaculture species such as salmon and tuna before being used for reef and other commercial fish species in a natural environment.

Source: Jennifer Foreshew, The Australian

Court asks Kochi port to look into seafood exporters' plaint on levy

The Kerala High Court has directed the Chairman of the Cochin Port Trust to look into the grievances of the Seafood Exporters Association of India regarding collection of excess terminal handling charges from exporters at the International Container Transhipment Terminal at Vallarpadam.

"If the Chairman finds any merit in the complaints of the Association, he shall take appropriate action," Mr Justice P.N. Raveendran said in an interim order on a petition filed by the Seafood Exporters Association of India seeking a directive to prevent collecting excess terminal handling charges from exporters at the Vallarpadam terminal.

In their petition, the association and other exporters pointed out that the India Gateway Terminal Private Ltd (IGTPL), which is operating the ICTT, and the Cochin Steamer Agents Association were demanding charges in excess of the rates fixed by the Tariff Authority for Major Ports (TAMP).

The petitioners said that the container trans-shipment was carried out at Cochin Port Trust at its Rajiv Gandhi Container Terminal till recently. After the IGTPL started operating the ICTT at Vallarpadam, the TAMP had revised the rates for users' services and facilities provided at the terminal. The service providers were governed by the tariff fixed by TAMP. It was the responsibility of the IGTPL that the authorised service providers did not charge more than the prescribed ceiling rates approved by the TAMP.

The tariff rates fixed were under several heads such as gantry crane charges, including lashing/ unlashing, stowage planning, transportation from QC to yard and vice-versa, transportation from container yard to rail yard and vice-versa, handling at container yard while receiving from quay, handling from truck/ rail for delivery/ receipt , wharfage charges, charges for supply of electricity, storage charges etc.

The terminal handling charges include the total of all charges approved by the TAMP. The charges at the ICTT were steeply raised by almost 125 per cent. After revision, the terminal handling charges of a 20 feet container would come to approximately Rs 6,575, and for a 40 feet, to around Rs 8,838.

The petitioners submitted that even the present tariff rates at the ICTT were much higher than that of the nearby ports such as Tuticorin and Chennai. In fact, it was highly prejudicial to the interest of its users. Even though several rounds of meetings and negotiationswere held to reach an amicable and fair pricing, nothing had materialised so far, the petitioners said.

- Hindu Business Line

Fisheries sector crying for technology: Experts

Despite contributing about five percent to the agricultural GDP of the country, the fisheries sector is still reeling for want of technology.

Speakers at the one-day workshop on 'Forecasting Technological Needs for Fishing and Fish Processing Sectors in India' stressed the need to invest in fishing and processing technologies in India.

Over 14.48 million people in India depend on fisheries sector for their livelihood. Yet there are obstacles that fishing industry face, including over-exploitation, pollution, adverse impacts on biodiversity, lack of diversification in fishing and fish processing, capture of juveniles, apathy towards scientific advice for obtaining sustainable fishery yields, fuel cost hike, low technology application and climate change impacts. The workshop is being held under the National Agricultural Innovation Project at the Central Institute of Fisheries Technology (CIFT) on Thursday. It is being jointly conducted by the Indian Agricultural Statistics Research Institute, New Delhi, and the CIFT.

In the first session CIFT director T K Srinivasa Gopal and scientist Charles Jeeva spoke on future technological needs for sustainable and development-oriented fishing and fish processing sectors of the country. "Compared to other countries, India is lagging behind, in terms of quality of fish production and export," says Anwar Hashim, president, Seafood Exporters Association of India, Kochi. He spoke on the possibilities in the export of Octopus, Mahi Mahi, Red Snapper etc. The topics discussed, include the relationship between research and development in agriculture, technological needs and infrastructure, institutional support required for sustainable development. IASRI scientists K Gopakumar, V K Bhatia and Ramasubramanian V, CMFRI team comprising P U Zachariah and N G K Pillai and CIFT experts C N Ravisankar, M R Boopendranath and S.Balasubramaniam made presentations.

- Express News Service

Focus on fisheries, animal husbandry sectors: Minister

'Both sectors hold immense potential for generating jobs'

The country should focus on fisheries and animal husbandry sectors, and should make progress in the sectors as in the agriculture sector. A separate department for fisheries and animal husbandry at the Centre is a long-standing demand, Union Minister of State for Consumer Affairs, Food and Public Distribution K.V. Thomas has said.

He was delivering the valedictory address at the national consultative workshop for the preparation of a vision document and strategic plan for the Kerala University of Fisheries and Ocean Studies (KUFOS).

"Both the sectors hold immense potential for generating job opportunities. The research and academic works done at the university should benefit the industry. Now, we do not have enough facilities to preserve and tap our fisheries resources, neither do we have proper technology for ocean and harbour engineering. The new university should be able to address issues like these," said Mr. Thomas.

First university

KUFOS was established as the first fisheries university in the country on November 20, 2010, and started functioning from the campus of the College of Fisheries, Panangad, on April 1, 2011.

Dominic Presentation, MLA, who was the guest of honour at the valedictory function, said that the legislators from the district had decided at the District Development Committee meeting that the move to hand over the land marked out for the University at Puthuvype to the LNG Terminal should be stopped. The Chief Minister had also agreed in principle to retain the land with the university, Mr. Presentation said.

B. Madhusoodana Kurup, Vice-Chancellor, KUFOS, and K. Gopakumar, Chairman, Master Plan Committee, spoke.

In the two-day workshop, proposals for courses under five departments - Fisheries, Ocean Sciences and Technology, Ocean Engineering, Climate Variability, and Management - were discussed.

Minister's appeal

On Friday, after inaugurating the workshop, K.C. Venugopal, Union Minister of State for Power, said KUFOS should identify the real issues faced by the fishermen and there should be vertical and horizontal communication between the university and fishermen communities.

Knowledge sharing between the university and the industry should be made a routine activity and fishermen should be the stakeholders of the university.

Social commitment

Curriculum and research activities should be designed with social commitment, said Mr. Venugopal, citing the example of China, which has three such universities.

KUFOS should take the initiative in moving on to relatively new branches of information such as 'marine drugs'. Efforts should be made to tap the traditional knowledge of fishermen about medicinal qualities of marine organisms. Studies should be done in aqua-culturing and value-added marine products.

With an annual marine fish landing of seven lakh tonnes and inland fish resources of 1.5 lakh tonnes, Kerala leads the industry, which fetches a foreign exchange of about Rs.2,000 crore and domestic market turnover of Rs.5,000 crore. "We need to tap this potential," the Minister said.

- Hindu

India-Japan FTA opens bilateral market

Duties on a large share of imports from Japan have been slashed, while doors are thrown open for India's exports to the USD five trillion Japanese market with the comprehensive free trade bilateral pact coming into force on Monday. Aimed at doubling the bilateral trade to USD 25 billion in three years, the Comprehensive Economic Partnership Agreement (CEPA) will result in 94 percent of the bilateral tariffs being eliminated within 10 years. But duties have been removed or slashed on the bulk of items right away, according to the pact, India's first with a developed country. India has made commitments for liberalisation of its market in telecom, financial and distribution sectors.

While the automobile sector has largely been protected from the cheap Japanese imports, New Delhi has "shown flexibility to the demand of Japanese side for parity with South Korea for items such as diesel engine and gear boxes". India's free trade agreement (FTA) with South Korea has already come into operation. Japanese have agreed to collaborate in the exploration of rare earths reserves in India. This is considered one of the key takeaways, in the wake of Chinese stopping supplies globally.

The exporting sectors which would gain, include agricultural products like mangoes, citrus fruit, spices and instant tea, rums, whiskies and vodka, textiles, chemicals, cement and jewellery and pharmaceuticals. Indian professionals are set to make strong gains. Japan has offered special commitment on entry and temporary stay for Indian instructors of Yoga, Indian cuisine, Indian classical music and dance as also English language. India has already liberalised its trade through FTAs with Association of Southeast Nations and individual pacts with ASEAN members like Singapore. Negotiations for an FTA with the European Union are in advanced stage.

More Than Half of Tuna Species in Danger

Three tuna species are threatened and two others are likely to be, if measures are not taken to protect them. Overfishing is the main reason, due to their high commercial value. Tuna species are one of the most popular fish for human consumption globally. Will they be eaten into non-existence? Three species of bluefin tuna-southern, Atlantic and Pacific-are all in danger of collapse due to human activities. The two species not yet threatened, but close to it, are yellowfin and albacore. All three bluefin tuna species are susceptible to collapse under continued excessive fishing pressure.

"The southern bluefin has already essentially crashed, with little hope of recovery," said marine conservationist Dr. Kent Carpenter. (Source: IUCN.org) Just this year a single bluefin tuna sold for nearly $400,000 in Japan. Bluefin tuna were denied status as an endangered species by the National Marine Fisheries Service in June. An online pledge to boycott bluefin tuna has been published by the Center for Biological Diversity. If all the tuna are eaten, what fish will be next up on the overconsumption menu?

One major issue with overfishing long-lived fishes such as tuna is that they require more time to reproduce, so recovery from depletion of their populations is harder. Simply making changes to regulations is not the only answer either, as some fishing boats will continue taking fish illegally unless there is consistent enforcement. It seems one of the best strategies, if it will be undertaken, is for consumers to inform themselves about the impact of their own behavior and choose alternatives to tuna. It would better for the tuna for people to stop eating it and use something else such as a fish like tilapia that is not in danger of collapsing. There is actually a vegan meat alternative product called Tuna (Not) which contains no real tuna, and uses soy flour as a protein source. The best choice for the environment is a vegetarian diet.

Will tuna be fished into extinction? It is up to us to stop it by changing our behavior, and on an individual level this is a very easy thing to do. Collectively it is harder, but it can be done.

Source:www.care2.com

Hygienic fish markets soon

The National Fisheries Development Board (NFDB) will set up hygienic modern fish markets in the Northeast on the lines of those in Andhra Pradesh. Union minister of state for agriculture and food processing Arun Yadav told reporters here today that all the states of the Northeast, including Sikkim, would get modern hygienic fish markets. He asked senior officials of the State Fishery Department to visit the markets in Andhra Pradesh.

He was speaking on the sidelines of a workshop on Strategies on Enhancement of Productivity of Fisheries in North Eastern States. The workshop, which was attended by senior officials of central and state fisheries departments and farmers from all over the Northeast, aimed to explore the possibilities of enhancement of productivity of fishery products.

P. Krishnaiah, the chief executive of the National Fisheries Development Board under the Union ministry of agriculture, said the fish markets they had set up in Andhra Pradesh had changed the concept that a fish market was a place where buyers had to bear the stench.

Yadav interacted with fish farmers during the workshop. He said the region had a vast potential for fish production because of its water resources but had failed to utilise it fully because of lack of proper infrastructure and guidance. "We will take care that the huge potential is utilised in a proper way," he said.

At present, fish production in the Northeast is only 3.7 per cent of the national production. To meet the shortage, the region imports fish from Andhra Pradesh. Imphal alone needs 25,000 tonnes of fish a year while Manipur produces just 19,600 tonnes. "Considering the geographic aspect, Assam should take the lead in fish production in the region," Krishnaiah said.

Assam's fish production has increased from 181.48 lakh tonnes in 2006-07 to 218.82 lakh tonnes in 2009-10. Its total requirement is 2.36 lakh tonnes.

- Telegraphindia

EU unveils major Common Fisheries Policy reform

The Common Fisheries Policy has been in effect for 28 years, but Maritime and Fisheries Commissioner Maria Damanaki says it has been a failure.

The European Commission has unveiled major plans to reform the EU's fishing industry and stop catches being wasted. The proposal, due to take effect from 2013, would give fleets quota shares guaranteed for at least 15 years. "Discards" will be phased out - the practice whereby up to half the catch of some fish is thrown back into the sea to avoid going above the quota.

But environmentalists say the new plan would lead to a "virtual privatisation of the oceans".

"There is overfishing; we have 75% overfishing of our stocks and comparing ourselves to other countries we cannot be happy," Ms Damanaki told BBC Radio Four's Today programme. "So we have to change. Let me put it straight - we cannot afford business as usual any more because the stocks are really collapsing." There will be hard bargaining by the European Parliament and EU member states' governments before the new policy is adopted.

Restoring stocks

The Commission says at present, three out of four species are overfished. In the Mediterranean, 82% of fish stocks are overfished, while in the Atlantic, the figure stands at 63%.

Under the new scheme, boats are expected to land all the fish caught, and the whole catch would count against quotas. This would apply to species including mackerel, herring and tuna from the beginning of 2014.

Cod, hake and sole would follow a year later, with virtually every other commercial species coming under the regulation from 2016. The reform also includes plans to restore fish stocks over the long term and allow EU member states to set incentives for the use of selective fishing gear.

The Commission says too many detailed decisions on fisheries have been made by Brussels. It now says it wants to hand back more decision-making powers to member states, so that the industry tailors its actions to local conditions.

Other measures include:

- ensuring catches are within levels that can "produce the maximum sustainable yields" by 2015
- implementation of an "ecosystem-based approach" to limit the impact of fishing
- reduce fleet overcapacity through market measures rather than subsidies
- promote the development of "aquaculture activities" to ensure food security and job opportunities
- developing alternative types of fish management techniques

Every year it is claimed tens of thousands of tonnes of dead fish are thrown back into the sea. There has been widespread public opposition to discards across the EU, with more than half a million people signing a petition publicised by UK celebrity chef Hugh Fearnley-Whittingstall.

No easy ride

The negotiations are "not going to be easy," said Markus Knigge, policy and research director for the Pew Environment Group's Brussels-based European Marine Programme. "I do believe that most member states accept that we have to do something, but when it comes to solutions, that can be more difficult to discuss than the failures of the current policy," he told BBC News. He said that there were a number of nations that were not happy about particular parts of the proposals, such as the role of scientific advice in the process of setting catch limits.

He added that it was not possible to gauge how negotiations would go because, as a result of the Lisbon Treaty, the European Parliament would have an equal say as the traditionally more powerful Council of Ministers.

- BBC News

Kerala sets up Ocean Information System to predict Tsunami

An ocean information system to predict Tsunami and marine-related natural disasters was commissioned at the Vizhinjam Harbour near Thiruvananthapuram, Kerala. Chief minister Oommen Chandy, formally inaugurated this state-of-art device 'Ocean State Forecast and Fishery Information System for Kerala'. It would be able to predict tsunami with 80 per cent accuracy and tidal waves and direction of tides nearly three days in advance The Centre for Earth Science Studies has set up this system

- ANI

India's seafood exports likely to touch $ 4.7 billion by 2013-14: ASSOCHAM

India's seafood exports are likely to touch $4.7 billion by 2013-14 from $2.84 billion in 2010-11 provided key thrust areas like value-addition, expansion of aquaculture, technological upgrade and tapping unexplored resources get a boost, according to ASSOCHAM (Associated Chambers of Commerce and Industry of India). In a study titled Seafoods Market in India by 2014, it said seafood exports totalled $1.9 billion in 2008-09 and moved up to $2.84 billion in 2010-11. They have the potential to accelerate faster in view of growing demand from the European Union, the United States, China, Southeast Asia and Japan.

The exports of marine products from India set an all-time record of 8.07 lakh tonnes in 2010-11, marking an increase of 18.96 per cent in quantity terms, 27.64 per cent in rupee terms and 33.17 per cent in dollar terms over previous year. In terms of export earnings, frozen squid continued to be the largest export item (60.11 per cent in value terms) followed by frozen shrimp (36.21 per cent), frozen fish (28.03 per cent) and fresh cuttle fish (18.45 per cent).

Large-scale production of Vannamei in addition to high productivity of black tiger shrimp and increased landing of squid attributed for the increase, said ASSOCHAM. The paper suggests that the strength of current fleet of fish catching vessels in India is less than 70,000 in numbers. The capacity of each is less than two tonnes which needs to be expanded to nine tonnes for increasing fish acreage with the latest remote sensing equipment. ASSOCHAM also suggested that the Marine Products Export Development Authority (MPEDA) needs to be financially strengthened through central allocations so that sea exporters get adequate fiscal assistance.

The European Union accounts for 20.94 per cent of India's marine product exports in quantity, 26.69 per cent in value and 26.66 per cent in dollar realisations. The United States recorded a share of 6.17 per cent in quantity, 15.47 per cent in value and 15.4 per cent dollar realisations.

The share of Southeast Asia in Indian marine product exports was 28.7 per cent in quantity, 16.38 per cent in value and 16.42 per cent in dollar realisations. Export to China showed a growth of 19.65 per cent in quantity, 15.37 per cent in value and 15.45 per cent in dollar realisations.

States like Andhra Pradesh, Tamil Nadu, Kerala, Maharashtra, West Bengal, Gujarat and Orissa have huge potential, which needs to be harnessed in a manner that can enhance India's export potential further, said the body.

- fnbnews.com

Green Certification of Freshwater Ornamental Fishes in India

What is Green Certification of Ornamental Fishes?

It is a procedure by which the nodal agency designated for the purpose, gives an assurance that the ornamental fish has been caught/ produced/reared in a manner that ensures social and environmental sustainability besides certifying its supreme quality as regards to the health and biosecurity issues. The Green certification logo affixed on the product shows that it is a Green certified product. All the freshwater ornamental fishes are covered under this system.

How important it is?

The Green certification is an attempt to address the social and environmental concerns of the ornamental fish trade. It's aim is to ensure the sustainability of the sector besides supplying high quality product to the consumers. A Green certified fish fetches premium prices thereby compensating the efforts and investments put in by the various segments of the value chain to meet the requirements of Green certification.

Who implements Green Certification?

The Marine Products Export Development Authority (MPEDA) under the Ministry of Commerce & Industry, Government of India is the nodal agency for implementation of Green Certification of Freshwater ornamental fishes in India. MPEDA has brought out a book entitled "Guidelines for Green Certification of Freshwater Ornamental fishes" which contains detailed protocols and procedures for Green Certification which include wild capture areas, Primary Holding Facilities, Secondary Holding Facilities, Breeding and Culture Facilities and Export Facilities.

MPEDA Green certification logo

How it is implemented?

All the stake holders of the sector have equal role and responsibility for the success of the venture. The concept propagated through awareness programmes and training programmes reaches all the stakeholders and the nodal agency, with the network of its offices in the country ensures the compliance to these standards.

Microelectronic transmitters help prevent aquaculture fish escapes

Microelectronic acoustic transmitters implanted in the stomach of farmed sea bream and sea bass help a team of Spanish scientists to study the behavior of these fish and prevent their escape. The signal emitted from these transmitters is picked up by underwater detectors located around the farms.

Using this tool, researchers from the Department of Marine Sciences at the University of Almería and from the Instituto Ramon Margalef determined that both species are not further away than 10 kilometers from the farms of origin. The scientists also place a small plastic tag identifying the fish so that fishermen who catch tagged specimens can return them to the University of Almería.

This initiative of marking hatchery fish is developed in the framework of the Escape Prevention Programme, involving six other European countries, and the University of Las Palmas and the Basque Country. The group of experts has already simulated the escapes of 2,000 sea bream and sea brass previously tagged in the Bay of Guardamar.

The idea is to study the ability the run-away fish have to feed themselves, their reproduction as free specimens, ecological effects and the possibility of recapture. According to University sources, the escapes from the cages may occur because they get holed, break or sink.

The cages can be up to 15 meters deep and from 15 to 20 metres in diameter and contain between 50 and 100 tonnes of fish. "While aquaculture escapes are further studied in northern Europe, especially in the case of salmon and cod, in the Mediterranean there is less knowledge on this subject," said Pablo Sánchez, project coordinator.

This initiative aims to avoid major economic losses to aquaculture producers, and prevent potential environmental impacts such as the hybridization resulting from the cross breeding of genetically selected specimens with wild counterparts.

Source:FIS news

Steady growth in seafood exports to China

China is fast emerging as a favoured export destination for seafood industry from West Bengal and Gujarat. The Chinese importers are looking at these states for fishes like cuttle fish and ribbon fish, which are low priced. "The volume of seafood exports to China from West Bengal, which was almost negligible a few years ago, has now touched 6,000 -7,000 tonne annually.

Export enquiries from China are on the rise. Apart from low-priced fishes, China is also importing prawns from West Bengal," said Rajarshi Banerjee , director of Razban Seafood. Chinese demand is also being witnessed in Gujarat. In terms of both quantity and value, Gujarat is the largest seafood exporter in India. "Annually, we export over 1.98 lakh tonne fish that is valued at Rs 2,150 crore from the state. The export is growing at a steady pace of 20%," said Jagdish Fofandi, secretary (Gujarat), Sea Food Exporters' Association of India.

Gujarat is largely catering to China, which is a big market of cheap ribbon fish and croaker "Over Rs 1,100-crore worth seafood is being exported to China, followed by European Union countries like Portugal, Spain, Italy and the Netherlands where pan ready fish accounts for Rs 400-crore business. Also, squid and tuna are being exported to Thailand and USA, pomfret and seer fish to Malaysia, and black and white pomfret, fish pillet to the Middle East through the Pipavav Port," said Kenny Thomas, chief executive of Jinny Marine Traders, the largest fish product exporter from Veraval in Gujarat.

Gujarat is in an advantageous position as it has the country's largest 1,600-km long coastline and large continental shelf. Exporters are also looking at new markets like Russia , Vietnam and Africa, where the demand for seafood is on the rise.

Incidentally, in 2010-11 India had exported 1.57 lakh tonne seafood valued at Rs 1,957.69 crore. Bhaktibhusan Chakroborty of BS Sea Foods said: "Opening up of China's domestic market for cheap fish has benefitted us a lot. Volumes are increasing in a rapid manner." Banerjee said if West Bengal starts cultivation of vannamei shrimps, the seafood export revenue will increase.

-The Economic Times.OE.

Sustainable fish farming can ensure global food security

A global study by Conservation International and the WorldFish Center has identified aquaculture as key to feeding growing urban populations. The study by the international non-profit organisations, released at an Asean conference on aquaculture held last week in Bangkok, assessed 75 fish farming systems from 18 different countries.

The United Nations Food and Agriculture Organization (FAO) estimates that aquaculture is growing at a rate of 8.4 per cent annually, making farmed fish one of the fastest growing food supplies in the world. The industry is now worth more than US$100 billion and supplies more than half of the seafood consumed globally today.

Asia accounts for 91 per cent of that supply. World Fish predicts production will reach 79 to 110 million tonnes of fish by 2030, compared to 69 million tonnes in 2008.

The study's authors noted that the environmental impacts of aquaculture were increasing with the industry's growth, but that these were still less than the impacts from other, less efficient sources of protein such as pork and beef. Pork and beef consumption results in more food waste because fewer of the animal parts are used as food sources, and their cultivation contributes more phosphorus and nitrogen emissions to the environment than farmed fish.

The environmental costs of aquaculture can include water pollution, spread of disease to wild fish populations, the overuse of antibiotics, and harmful effects on biodiversity - but these can be controlled, said the study's authors. According to WorldFish Center, most of these issues arise from badly managed projects.

Concerning biodiversity issues, WorldFish said that when projects are properly designed, sited and managed, aquaculture can have little or no effect. It further noted that the majority of the world's aquaculture is located on inland ponds, away from sensitive coastal zones where biodiversity is of most concern.

The study's authors observed that the wide variation of environmental impacts from region to region demonstrates there is ample opportunity for improvement.

China, which alone supplies 64 per cent of the world's farmed fish,

was shown in the study to be less efficient than other aquaculture countries such as Thailand.

Vietnam, another large Asian supplier of farmed fish, earlier this year committed to raising its aquaculture standards to meet uniform criteria, called the Code of Conduct for Responsible Aquaculture (COC), set by the FAO. An official from the country's fisheries directorate said at the time the move would deter problems such as last year's red-listing of Vietnam's farmed tra fish, a type of catfish found in the Mekong Delta. He was referring to the product's placement on a list of fish deemed unsustainable by international non-profit WWF. WWF later removed the fish from the list.

Despite national level efforts to ensure sustainable fish farming methods, the country continues to struggle with illegal operators. Last week, Vietnamese news sources revealed the extent of damage to the nation's beaches due to illegel shrimp hatching ponds that pollute local ecosystems and drain freshwater supplies.

Dr Stephen Hall, director general of WorldFish Center and lead author of the report said: "There must be a wider exchange of knowledge and technology, with policies and action to promote sustainability and investment in research to fill the knowledge gaps. These efforts can lead to a more ecologically sustainable industry - an important goal, if we are to meet the world's future needs and demands for fish."

Most of that demand will be in Asia's cities, said WorldFish scientist Mike Phillips, who co-authored the report. "China, India and the rest of Asia with their growing middle classes are where we can expect demand for fish to rise most significantly," he said. He added that South and Southeast Asian countries such as China and Vietnam would provide most of the additional supply to meet this demand.

The world's population is expected to reach nine million by 2050. Most of that growth will be in urban areas in developing countries, according to the United Nations. Experts have said the swelling middle classes in those regions, who tend to consume more than poorer groups, will strain food resources on a global scale.

"With governments in the region looking to aquaculture to meet demand for animal protein, we need to better understand the environmental costs of expanding aquaculture," said CI's executive director for Indonesia Ketut Putra.

"This report will be tremendously helpful in showing us which species and production systems we should favour to keep environmental costs down," he added.

- eco-business.com

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Lobster head

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Fish meal

MPEDA's participation in International Seafood Exhibitions during 2011-12

Sl. No.	Name of Seafood Exhibition	Date
1.	Asian Seafood Exposition, Hong Kong	6-8 September 2011
2.	Dubai International Seafood & Fisheries Expo UAE	26-28 September 2011
3.	Anuga Fair, Germany	8-12 October 2011
4.	China Fisheries & Seafood Expo, Qingdao, China	1-3 November 2011
5.	London Seafood Expo, London, UK	28-30 November 2011
6.	International Boston Seafood Show, Boston, USA	11-13 March, 2012
7.	European Seafood Exposition, Brussels, Belgium	24-26 April, 2012